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ARTICLES IN THIS ISSUE DISCUSS:

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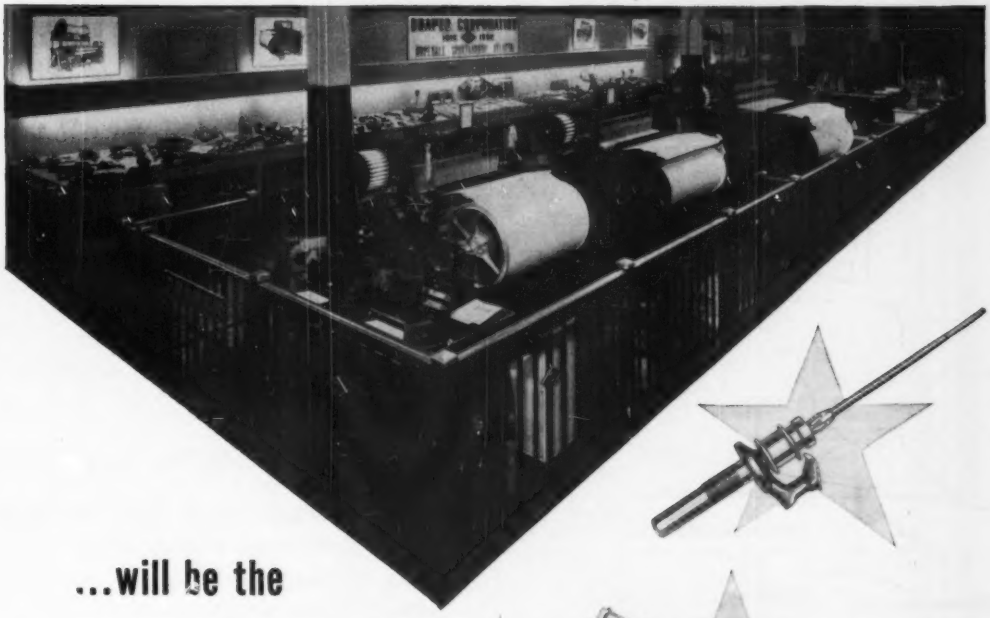

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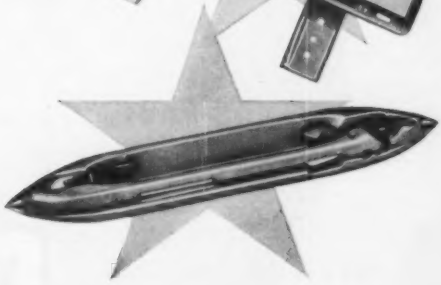

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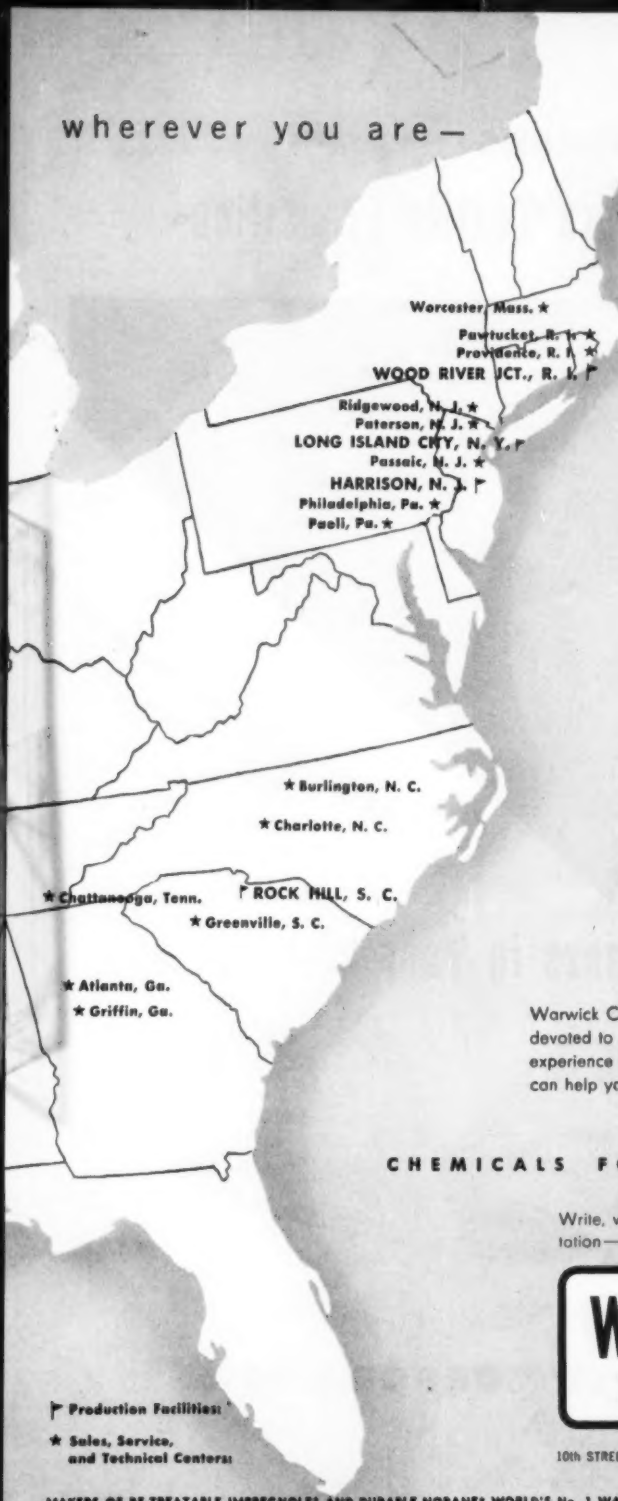
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THE Long-Range VIEW

A PERIOD OF TRIAL?

It is easy to call the Eisenhower victory on Nov. 4 a victory for businessmen. Since the outcome of the election became known, newspapers have published reams of statements, reports, etc., that indicate that businessmen in general hail Eisenhower and the Republicans as their deliverers from "government in business."

There are some odd contradictions in what businessmen expect. You read, for example, that they expect less taxes and less government spending, but they want a continuation of the present high level of dollar sales. They want far less money poured out by the government for the defense program and foreign aid, but they want to maintain present full employment and volume of consumer money available. They want organized labor to lose many of the gains it has made, but they want that with no accompanying loss of purchasing power.

In short, they want to keep the present volume of business activity but drastically reduce the factors that cut down the margin of profit.

Perhaps a formula new to government and economy may be found to accomplish these contradictions, but so far as we know no one has ever been able to eat his cake and still have it. It is a good bet that it will not happen this time.

At the moment, two business prospects for 1953 seem reasonable. They are based on the assumptions that the new administration will approach its duties cautiously and the threat of war will not grow significantly worse.

First, the defense program is expected to level off somewhat and general business activity to dip slightly in certain areas.

Second, competition for world textile business probably will get rougher, since Great Britain, Japan, and India expect to increase their exports considerably in 1953.

These two prospects indicate a tightening up in both the domestic and the world markets. Mill production should hold up at a satisfactory level, but experts look for a pinch on prices. If these predictions turn out to be correct, mills will be wise to count more heavily on what they can do for themselves than on what a more favorable administration might, or might not, do for them.

The most important thing that every mill should do is to keep itself capable of producing goods at the least cost. If the trend during the next four years is toward less government in business and less inflation, premium will be paid more and more for sheer competence in the face of stiff competition. It will be a time to cut away the dead wood, to study operations for inefficiency, to keep plant and equipment up to date, and to keep management and supervision more alert.

The second most important thing to do is to be more concerned than ever about workers. It is possible that the new administration will not so blatantly aid and abet organized labor as the last two administrations did. But unions will still be around, and any clumsiness on the part of mill management in the field of human relations will be an invitation to labor organizations. Aside from that ever-present threat, meeting or setting the pace of competition depends on the effectiveness of labor as well as on the efficiency of machinery. The keener the competition, the greater the advantage you get from a competent, a satisfied work force.

When the election analysts finally decide exactly why people voted so strongly for Eisenhower, it is possible that the facts will show that the victory was not for business but that business rode to victory on other issues. If that is true, business has four years to remove some of the odium thrown its way the last twenty years. It is a period of opportunity, but it may also be a period of trial. Like the Republican party, the actions of business during that period will unavoidably be called to account in 1956. What happens then could easily depend on the sum total of the actions and attitudes of owners, management men, and supervisors during these coming four years.

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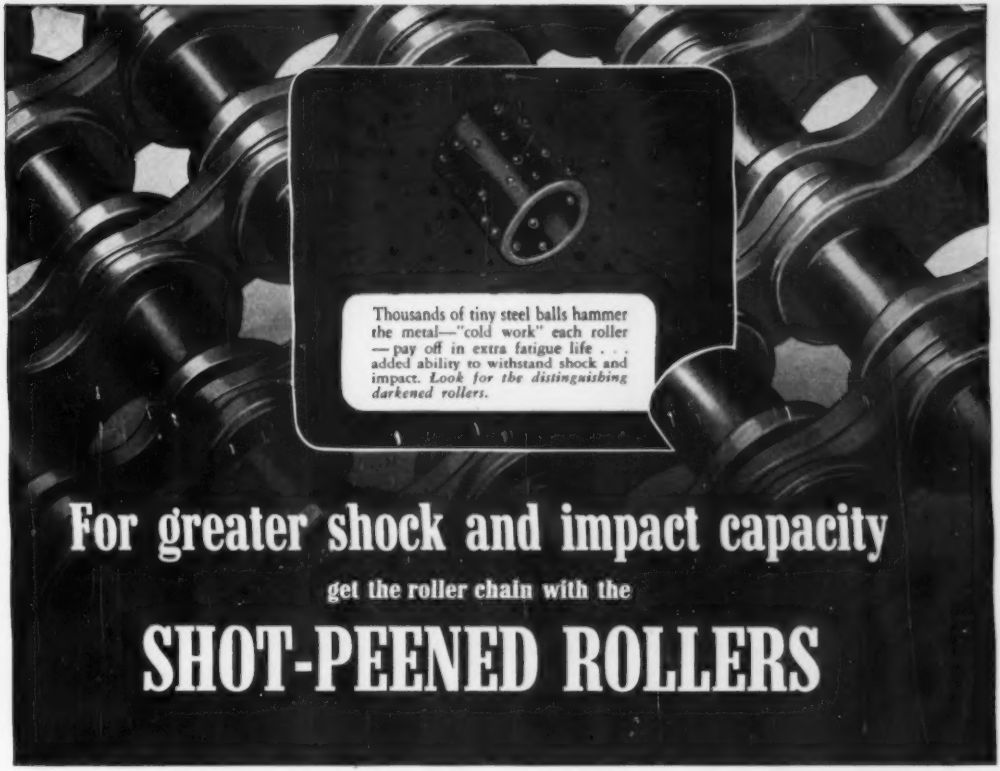
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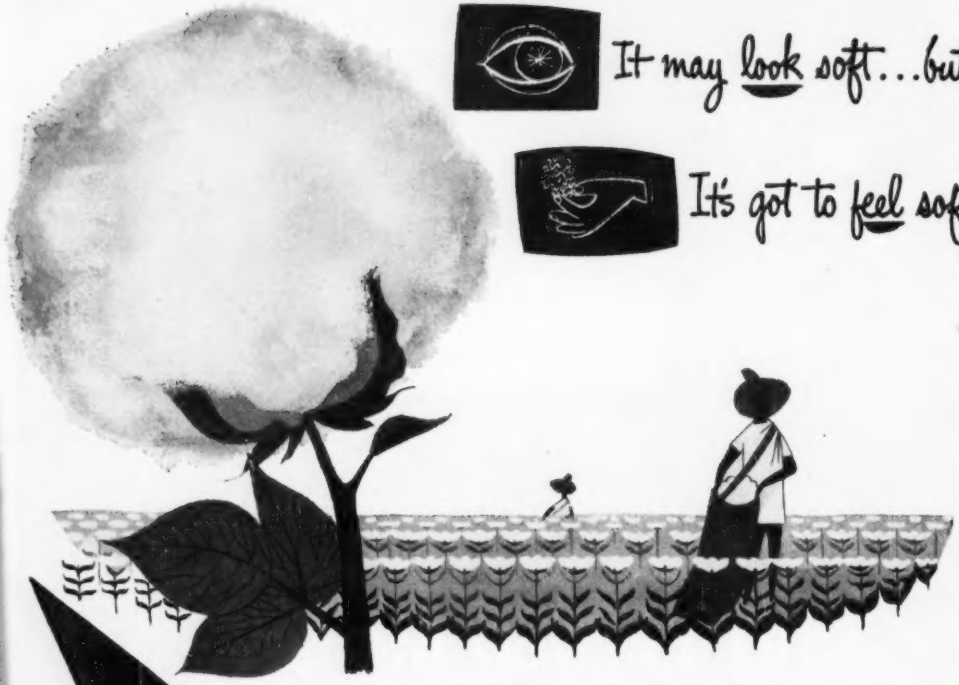

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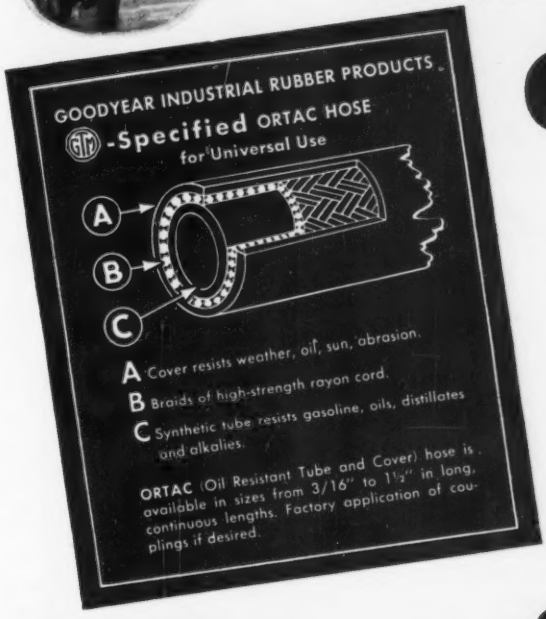
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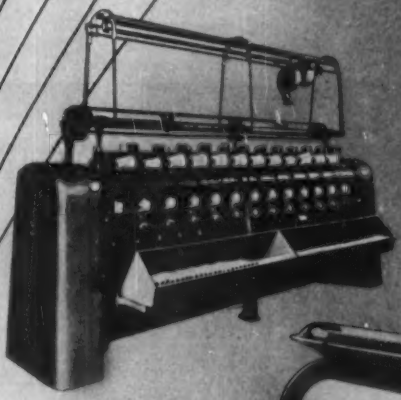
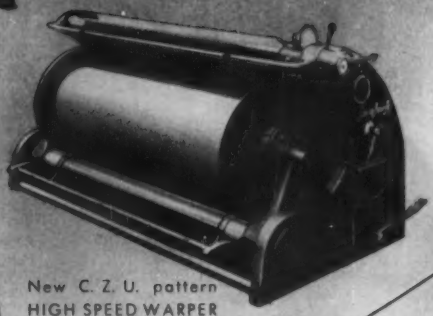
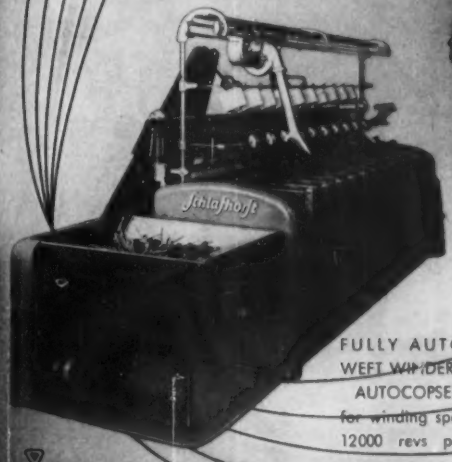


NEW GROOVED CYLINDER
CONE AND CHEESE WINDER
B. K. N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity



We also make CONE CREELS
of various types, such as f. i.
MAGAZINE CREELS
and TRUCK CREELS
with electric detectors of our
eyeboard system

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A. S. E.
for winding speeds up to
12000 revs per minute

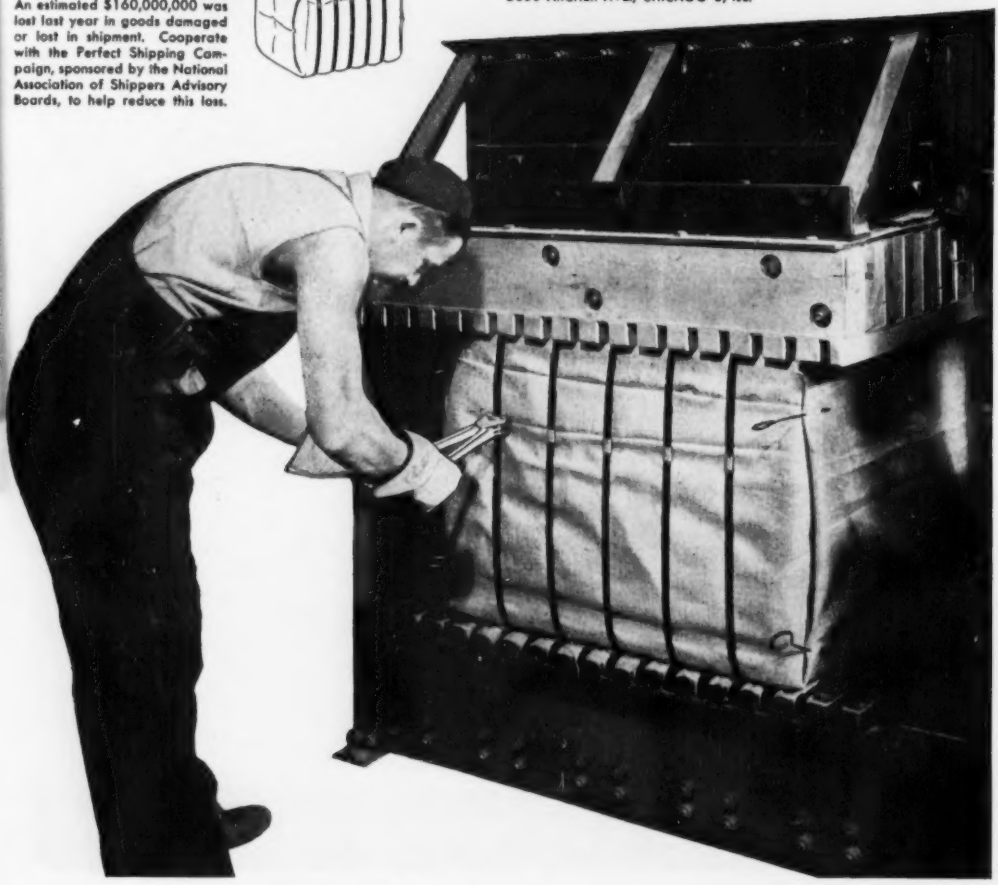
W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

Acme Steel Strapping Insures S.A. *(Safe Arrival)*

ACME STEEL

ACME STEEL PRODUCTS DIVISION
ACME STEEL COMPANY
2820 ARCHER AVE., CHICAGO 8, ILL.

An estimated $160,000,000 was lost last year in goods damaged or lost in shipment. Cooperate with the Perfect Shipping Campaign, sponsored by the National Association of Shippers Advisory Boards, to help reduce this loss.



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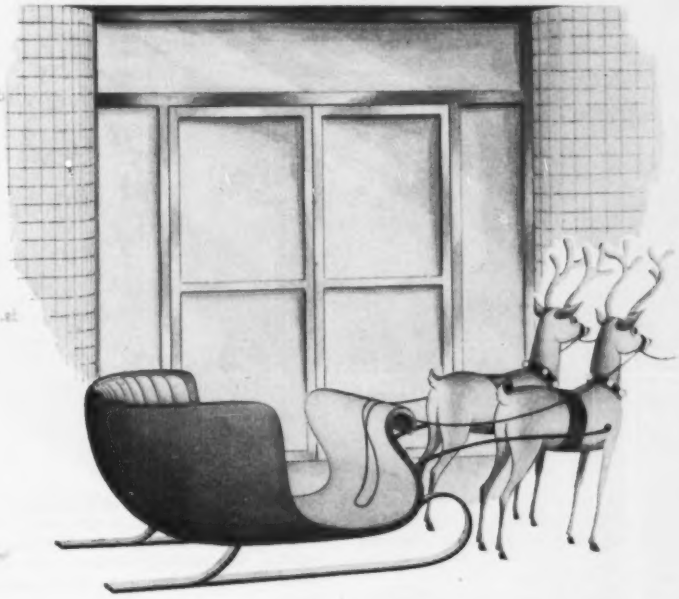
BURLINGTON

ENGINEERING COMPANY, INC.



Where's Santa?

(Confidentially, he's inside trying to buy more of our new ***PRESSURE BLEACH, BOIL-OFF and DYE MACHINES!****)*

Burlington ENGINEERING COMPANY, INC.

Alabama mill reports exceptionally low maintenance cost with Roto-Coner® Winders

WEST BOYLSTON INSTALLATION in Montgomery, Alabama shows Roto-Coner Winders used to both inspect and to package yarn for shipment. Streamlined surfaces of these winders are easy to clean, allowing little lint to collect. Roto-Coner Spindles start at the touch of a finger. Threading is simple, supply shelves close at hand.

"Annual repair parts costs averaged less than ¼ of 1% of the original investment,"

states West Boylston Manufacturing Company, a Division of United Elastic Corporation.

When West Boylston installed 1200 spindles of Universal Roto-Coner Winders back in '46 and '47, they were told that the upkeep of these winding machines would be negligible.

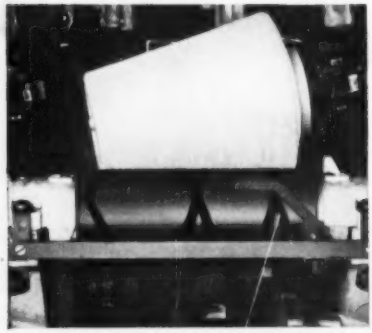
Now West Boylston is telling *us*.

Reports this large cotton yarn manufacturer, "Annual repair parts cost has averaged less than ¼ of 1% of the original investment!"

"What's more, there is not enough repair work on these and additional Roto-Coner Winders to keep one fixer busy! He fills out his time with additional duties."

This hearty testimonial is but one of many we receive from Roto-Coner users. This ultra-modern drum winding machine has no reciprocating parts whatever — no traverse cams that wear out, require greasing or adjustment.

Clean, quiet, easy to operate, the Universal Roto-Coner Winder will give you highest production at lowest maintenance cost in drum-winding your cotton, spun nylon, spun rayon, wool, worsted or blends.



ONLY THE ROTO-CONER HAS THE ROTARY TRAVERSE. Grooved roll acts as both driving drum and traverse guide.

EXCLUSIVE ROTARY TRAVERSE

Only the Roto-Coner Winder has the exclusive Universal Rotary Traverse. This one-piece driving drum and traverse guide eliminates the headache of frequent repairs. It lasts indefinitely and its lack of vibration contributes to low maintenance cost.

If you are not now using Universal Roto-Coner Winders, be sure to write for full details.

LEESONA®

UNIVERSAL WINDING COMPANY

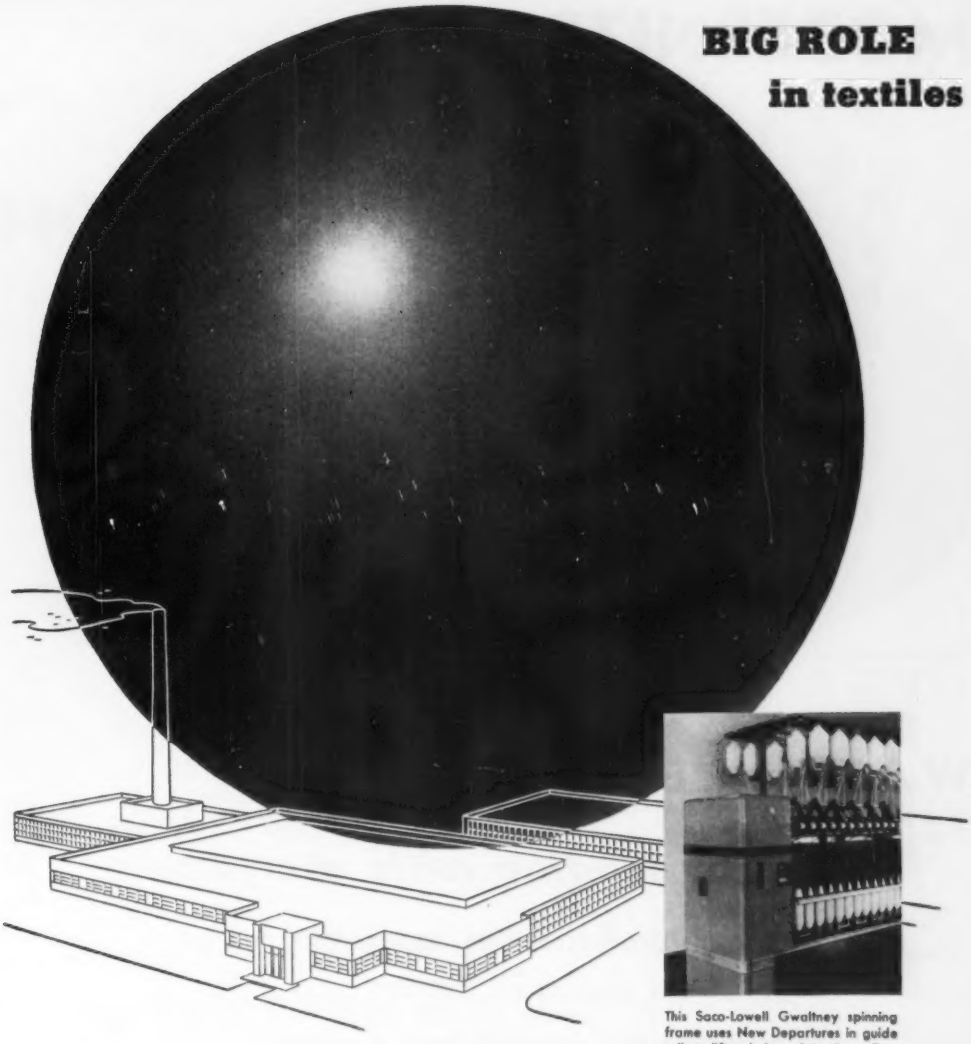
P. O. Box 1605, Providence 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

BIG ROLE in textiles



This Saco-Lowell Gwaltney spinning frame uses New Departures in guide rolls on lift rods, in each tension pulley, in each of the spindles and in the drive end assembly.

Spinning, weaving, knitting . . . cotton, wool, synthetics . . . whatever the machine operation or the composition of the final product, New Departure Ball Bearings play an important role in the textile industry.

New Departure originated "Sealed-for-Life" ball bearings and their uses are many in textile machinery. To make them even more efficient, New Departure has perfected a relubrication-by-injection system which revitalizes the sealed-in lubricant and substantially increases bearing life.

The Great Ball of New Departure symbolizes engineering excellence—and New Departure's application engineers and research facilities are always at your disposal. Keep your eye on the BALL to be sure of your BEARINGS!

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

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Pages
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MODERNIZE

with the ALL FIBER

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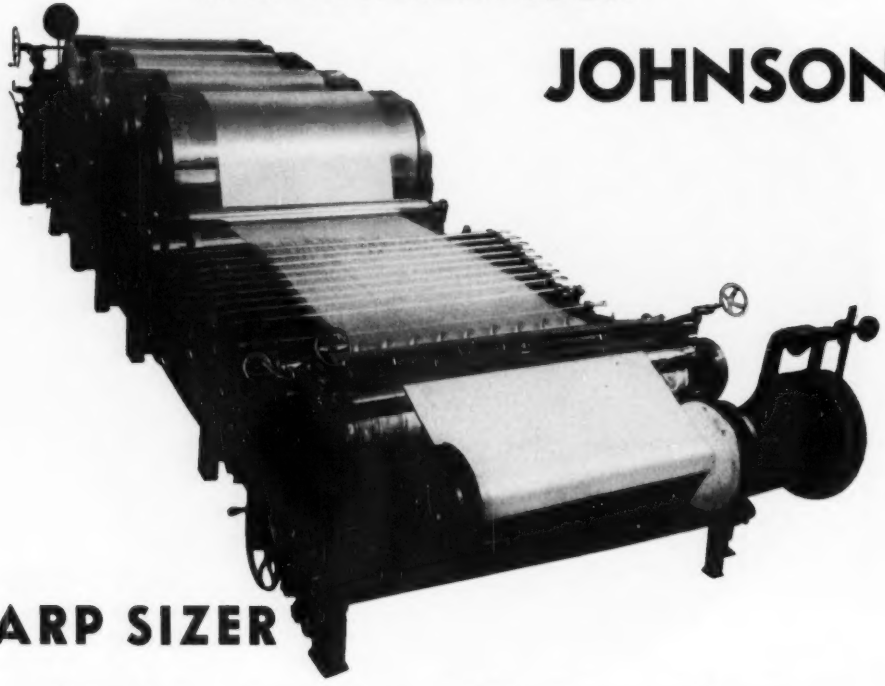
Why your machinery and motors last longer with LINK-BELT Fluid Drive's constant

MODERNIZE

with the ALL-FIBER

JOHNSON



WARP SIZER

Used by leading mills everywhere

–for high production of top quality warps

–for lowest operating costs

–for long-time, trouble-free service

A Johnson sizer in your plant will step up your plant efficiency, widen your range of fabrics, and improve your competitive position in a highly competitive market—for today and all the days to come.

For full details of the Johnson All-Fiber slasher, write for 16 page, 3 color folder illustrating this machine in detail.

Charles B. Johnson

Paterson New Jersey

Why your machinery and motors last longer with LINK-BELT Fluid Drive's constant

CUSHION ACTION

IF YOUR MACHINE loads are of the high inertia, repetitive shock or high starting torque type, Link-Belt's Fluid Drives can save you money.

Constant CUSHION ACTION gives you the shock absorption and overload protection you need. More—because shock load service factors can be disregarded, you can use power transmission equipment of lower horsepower.

Check the three curves below. They demonstrate three exclusive advantages of CUSHION ACTION. And for more detailed information, write for Book 2485. In it you'll find all the facts on five types of Link-Belt Fluid Drives — Electrofluid Drive, Electrofluid Gearmotor, Fluid Drive, Fluid Gear Drive and Fluid Coupling Drive.

Cutaway shows simple, rugged construction of Link-Belt Fluid Drive.

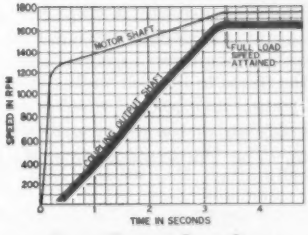
LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices, Factory Branch Stores and Distributors in Principal Cities.

LINK-BELT
FLUID DRIVES

13,054

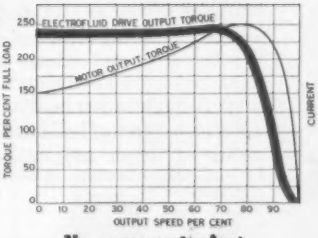
Here's proof

that LINK-BELT CUSHION ACTION offers you real savings . . .



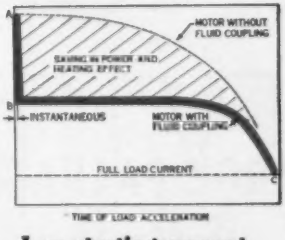
Smooth acceleration

Typical motor and coupling acceleration curves for a high-inertia load show how CUSHION ACTION smoothly and gradually accelerates the load, saving wear and tear on vital equipment.



No overmotoring

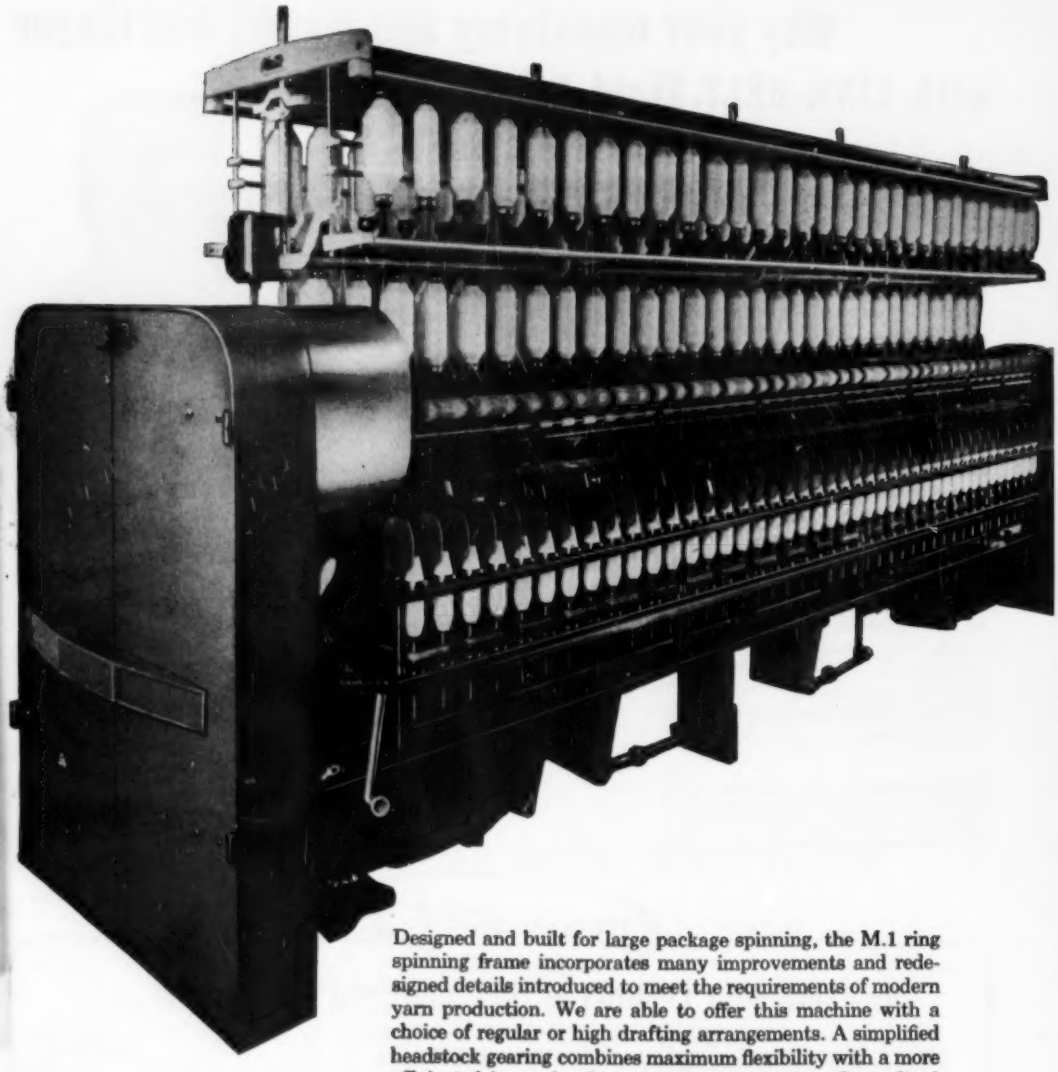
Compare the output torque of a motor with and without the fluid coupling. Because motor accelerates free of load, it reaches maximum pull-out torque that might otherwise require a special type of oversize motor.



Low starting current

As these current consumption curves show, with the fluid coupling, motor starting current drops instantaneously to less than half the starting current required by a motor without fluid coupling. Difference represents power savings, reduced heating.

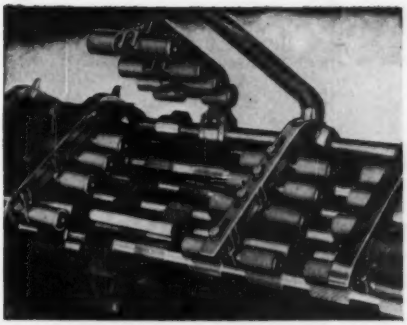
For more information, write direct or use Reader Service post card.



Designed and built for large package spinning, the M.1 ring spinning frame incorporates many improvements and redesigned details introduced to meet the requirements of modern yarn production. We are able to offer this machine with a choice of regular or high drafting arrangements. A simplified headstock gearing combines maximum flexibility with a more efficient drive and reduces power consumption. Centralized headstock lubrication allows the frame to be oiled while running. A combination building motion may be used which enables three types of build to be obtained on the same frame by means of simple adjustments. The Pneumafil system of broken end collection is normally fitted. May we send you full data.

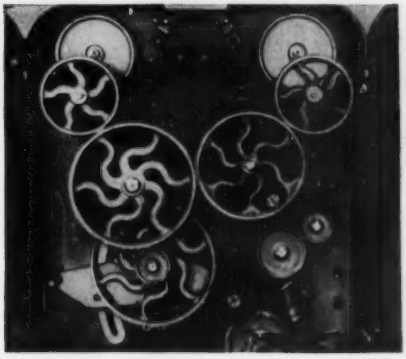
M1 LARGE PACKAGE RING SPINNING FRAME

PLATT BROS.
SALES LTD. OLDHAM, ENGLAND



NEW! SPRING ARM ROLLER WEIGHTING

Weight hooks and stirrups are gone. New spring arm adjusts to a wider range of staple lengths without altering the nip pressure. Resilience and pressure remain correct even after regrinding cots. Instant pressure release saves cots over week-ends. Central roller support arm raises for quick cleaning of ALL rollers. Few oilings are needed and none near the cots. (Pat. Pend.)

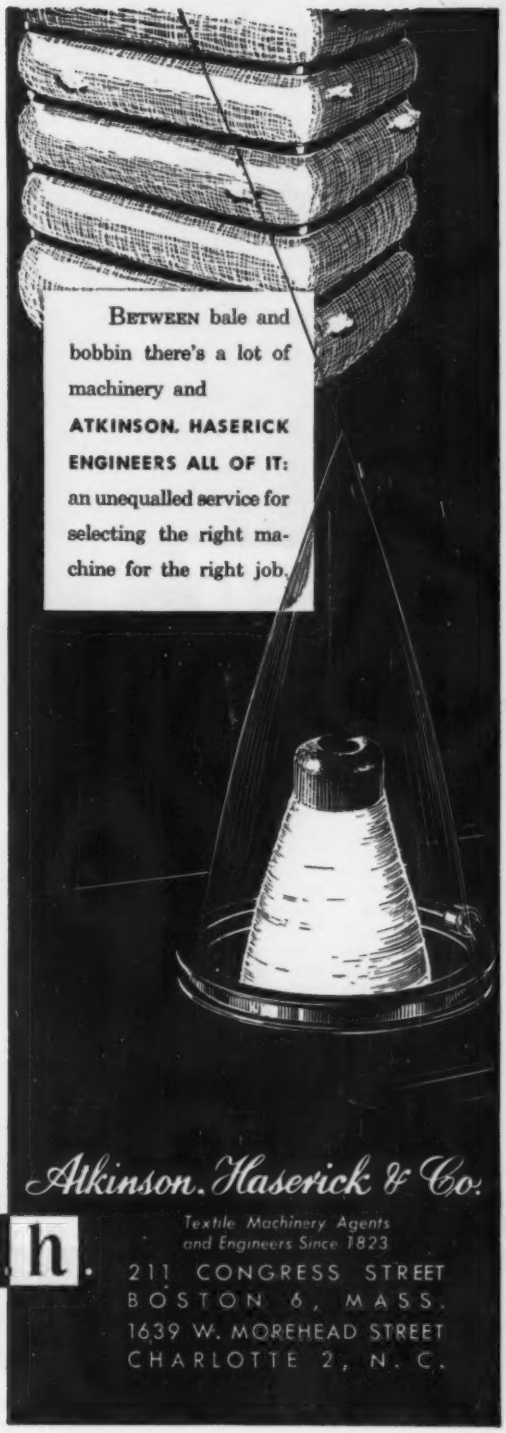


SIMPLIFIED HEADSTOCK

Headstock gearing has a central lubrication system allowing frame to be oiled while running and avoids excess or under lubrication. Simplified gearing combines flexibility of turns per inch while using fewer gears. Greater efficiency is attained and less power consumed.

HIGH SPEED SPINDLE

Cut-away, shows the heavy load, roller bearing spindle for large packages with long lifts. It is of the oil cushion ring brake insert design. They need routine maintenance at only 2,500 hour intervals. Power savings run up to 15% on this type of spindle.


BETWEEN bale and bobbin there's a lot of machinery and ATKINSON, HASERICK ENGINEERS ALL OF IT: an unequalled service for selecting the right machine for the right job.
Atkinson, Haserick & Co.
Textile Machinery Agents and Engineers Since 1823
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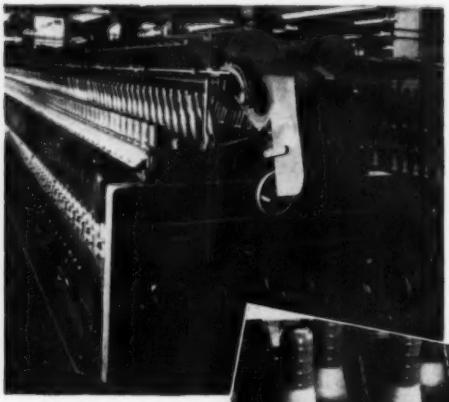
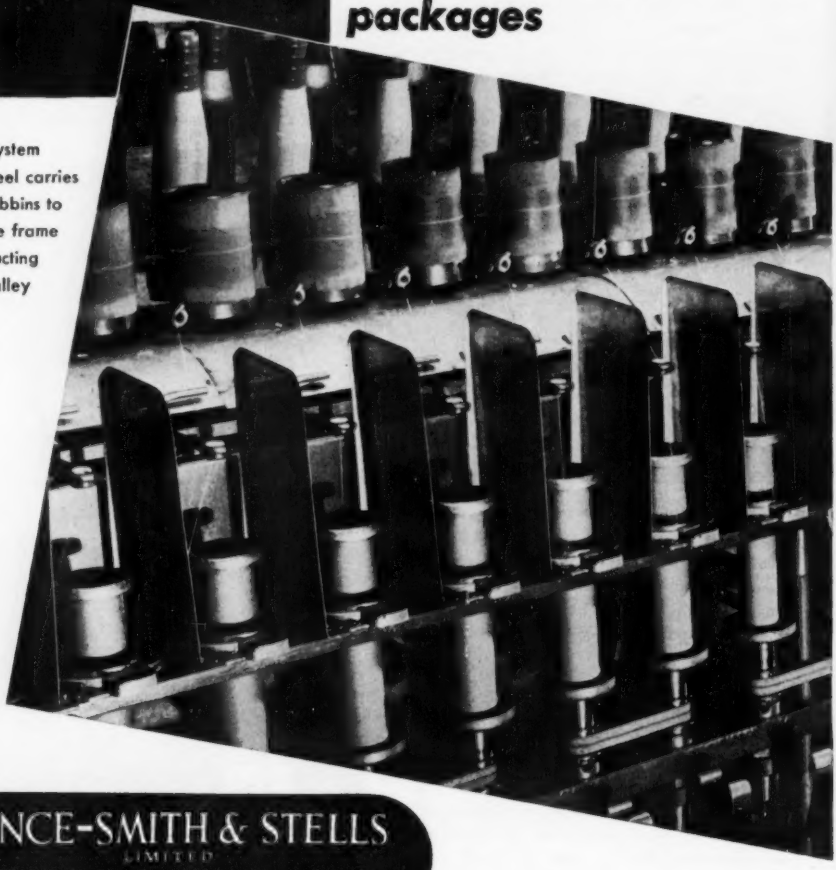
Twist Large Packages of



Prince-Smith & Stells improves 2-fold ring twister for fine count worsted yarns on large packages

A conveyor system above the creel carries the empty bobbins to the end of the frame without obstructing the working alley with trucks.



PRINCE-SMITH & STELLS
LIMITED
INCORPORATING TAYLOR WORDSWORTH & CO. LTD.
KEIGHLEY ENGLAND

U.S.A. Agents for French System Machinery: Blake Electric Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.

For more information, write direct or use Reader Service post card.

Fine Counts

IF YOU do two-fold twisting of worsteds, you will find this a very practical machine. It will give you all the time-saving advantages of large packages, together with full twisting control for even fine counts. Increasing the size of the dolly rolls to a 3" diameter gives a more accurate tension control and consequently a better yarn. New type spindles eliminates vibration and increases speeds. They require lubrication at only 2,500 hour intervals thus reducing the hazard of oil in the yarn area. Ball bearing tension pulley assemblies save power and tape wear. An adjustable change speed device permits quick alteration of spindle speeds. Combination creel allows you to run from either bobbins or large cones interchangeably. A simplified, rail lifter motion (each side separate) affords accurate, easy alterations for fine or coarse counts. The entire machine is designed for years and years of low maintenance service. For further information please contact Atkinson, Haserick & Co.

ABSORBS VIBRATION

The new Hoffman roller bearing spindle insert has a spring and sleeve which absorbs vibration between the rail and the bolster. The free running spindle uses less power and reduces tape slippage. The knee brake mechanism lifts the complete spindle unit from its normal position causing the top flange of the whorle to make contact with a stationary brake shoe.

WE ARE INDEBTED TO THE CLEVELAND WORSTED MILLS CO. FOR THE PHOTOS

NOTICE

TO OWNERS OF

ATKINSON, HASERICK & CO.

MACHINERY

You can secure revised recommendations for aprons, bobbins, card clothing, fallers, rings, screws, etc. for all machinery you have purchased from Atkinson, Haserick & Co. May we suggest that Purchasing Agents review specifications of their mill supplies with one of our engineers. These engineers are continually working with your type of machinery. Their recommendations for even slight changes in parts or usage can often produce gratifying results.

Atkinson, Haserick & Co.

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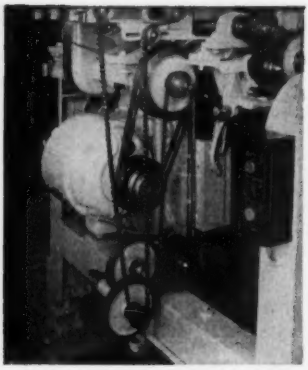
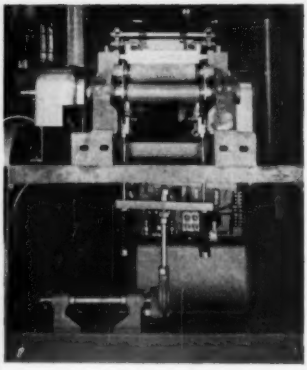
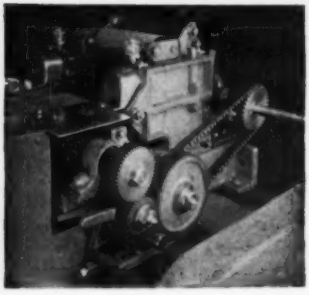


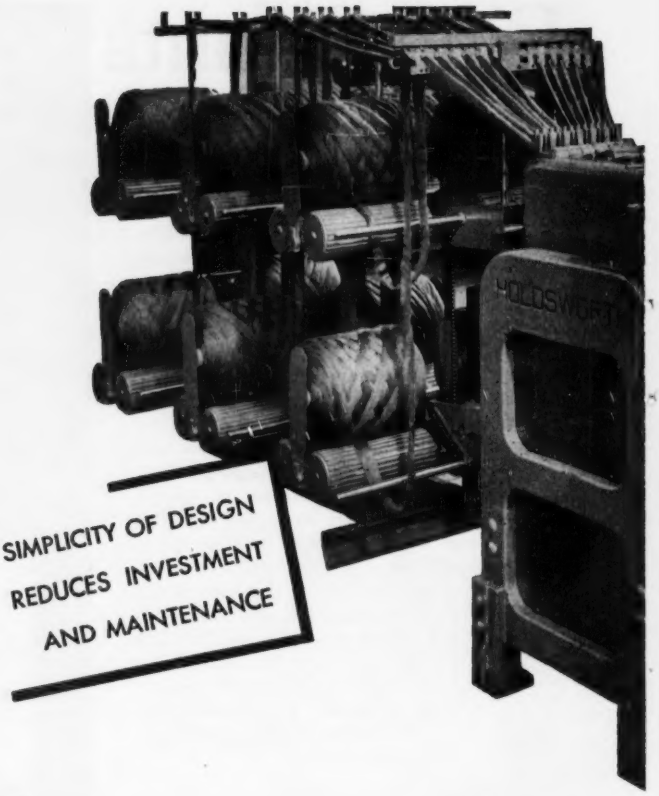
INDIVIDUAL MOTOR DRIVE View of the back of the frame shows how compact and accessible is the variable speed drive.



DRAWING OFF ROLLS & ROLLER WEIGHTING The simple, quick relieving, roller weighting is shown together with the front rolls and electrical control panel.

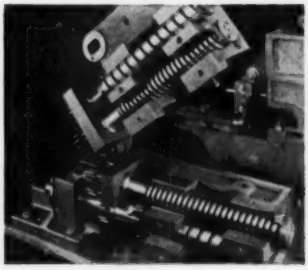
CHANGE GEARING These are the only change gears in the entire machine and are easily accessible for quick changing. Note the sturdy construction.



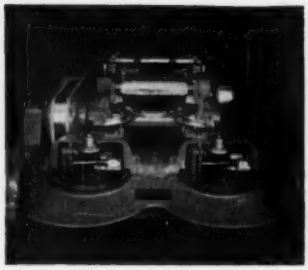


SIMPLICITY OF DESIGN REDUCES INVESTMENT AND MAINTENANCE

Holdsworth Gill



HEAD OPENED, STILL IN TIME Head may be opened for cleaning or inspection without disturbing the timing. The sturdy screw blocks are shown with Holdsworth one piece screws and patented Holdsworth cams. These screws will transport the famous Holdsworth fallers that have solid steel middles drilled for replaceable pins.



IMPROVED COILER HEADS The coiler head is opened here to show the simplicity of the new, improved mechanism. Sliver guides and two of the four push button controls can be seen in this view. The Holdsworth Gill Reducer is also made with a balling head if desired. (Ball creel is shown in main illustration: can creel is available.)

Reducer

FOR WOOL, SYNTHETICS & BLENDS

There are fewer working parts in a Holdsworth Gill Reducer — Fewer parts to maintain. Fewer parts to wear. Fewer parts to purchase. Yet the ruggedness and good machining of these parts allows the taking of two ends through one head. If you will consider these advantages in relation to your mill, perhaps you will want to see these Reducers in action. Wire us collect to locate the installation nearest to you.

HOLDSWORTH
GILL SCREW CO., INC.
PLANT: 55 SABIN STREET
PAWTUCKET, R. I.

48 Hour Service

REPAIRING GILL SCREWS

Send Holdsworth Screws to be repaired direct to the plant, 55 Sabin St., Pawtucket, R. I. Within 48 hours we will send you a screw expertly repaired and of true pitch. We also repair all types of fallers.

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211 CONGRESS STREET
BOSTON 6, MASS.
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CHARLOTTE 2, N. C.

This roll covering combines smoothness with holding power

It's smooth enough to handle your finest chiffons and marquisettes—yet this new take-up roll covering develops up to twice the holding power you'd expect from rubber.

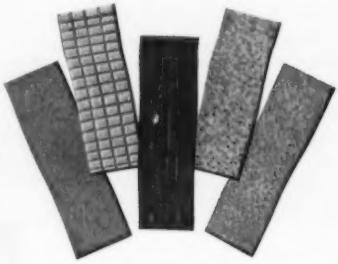
The new covering—Armstrong's NO-732—is made of a recently developed synthetic rubber compound, and it has a sturdy fabric backing.

Test NO-732 yourself. First, feel how smooth it is. Then rub it on any surface—your desk, your clothes, the fabric you weave. You'll be amazed at the light pressure needed to make it grip.

Get samples and more information today. Call your Armstrong representative or your mill supply salesman. Armstrong Cork Co., Textile Products Dept., 5012 Arch St., Lancaster, Penna.

ARMSTRONG OFFERS A FULL LINE OF TAKE-UP ROLL COVERINGS

Whatever your preference, Armstrong can supply a wide choice of take-up roll coverings of synthetic rubber, cork and synthetic, plain or gridded cork.



ARMSTRONG'S TAKE-UP ROLL COVERS

Product of the Armstrong Cork Company, Textile Products Department, Lancaster, Penna.

What Do You Need Most in Your Wool Oil?

You Get Your Choice . . . On a Price-Performance Basis . . . From Our Five Proved Products

Is *scourability* vital in the wool oil you use? *Resistance to discoloration* important? Oil *price* a prime factor?

Whatever your needs—whatever your operation—you'll find just the right product in the complete line of S/V *Woolrex Oils*. Each of these five oils is of highest quality in its class . . . each is designed to do a specific job—*on a price-performance basis!* For example . . .

S/V *Woolrex SS* is a *premium* oil with maximum scourability and exceptional resistance to discoloration. S/V *Woolrex 1000* is a low-cost product for use where maximum scourability and discoloration resistance are not vital. Between these two are S/V *Woolrex* 1500, 2000 and 3000—with varying degrees of scourability and discoloration resistance, and priced accordingly.

* * *

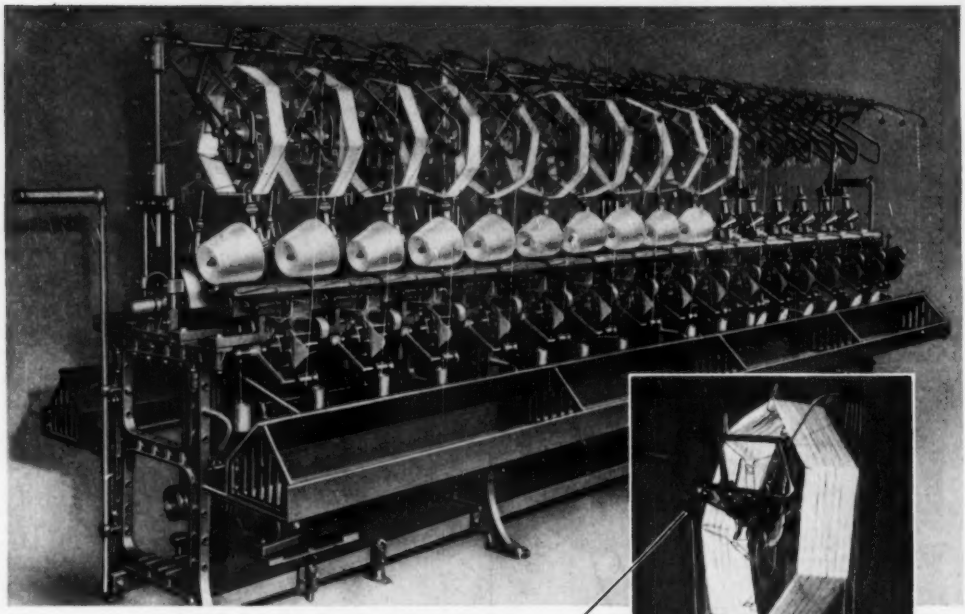
Your Socony-Vacuum Representative will recommend the most suitable oil—both as to performance and price—for your particular operation. Call him today.

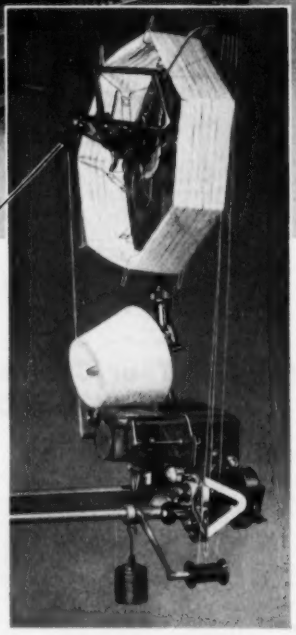
Socony-Vacuum
Process Products

Process Products
SOCONY-VACUUM

SOCONY-VACUUM OIL COMPANY, INC., 26 Broadway, New York 4, N. Y.
and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

Now you can wind Perfect Knitting Cones in One Winding Operation . . .





with the silent, smooth-running SCHWEITER KM CONE WINDER

. . the special skein-to-cone winder

Positive increases in production and lower winding costs are yours when you install the Schweiter KM Cone Winder. No other winder made today can rival this machine for efficiency, economy of operation and the volume production of perfect cones. Following are a few of the many special features which make the KM Winder a sound investment for operators of knitting and hosiery mills.

- Winds perfect knitting cones
- Gear-driven wax application
- No stretched yarn • No waste
- No backwinding necessary
- Self-threading sapphire guides
- Eliminates yarn breakages
- Winding unit stops when yarn gets entangled in the skein

SCHWEITER-WOUND YARN IS A KNOTLESS, PREMIUM YARN

SCHWEITER LTD.

HORGEN (Zurich) SWITZERLAND

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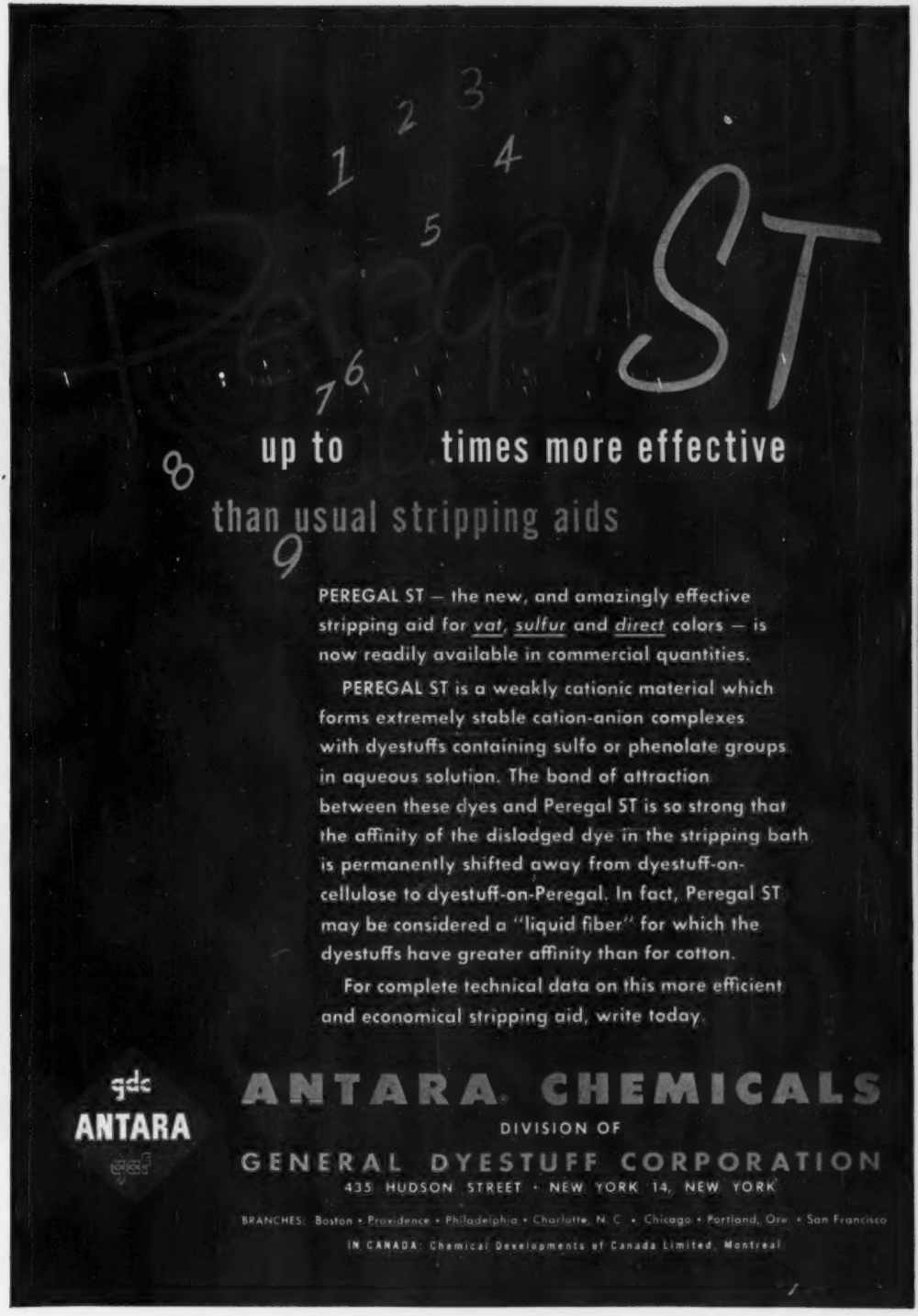
Peregal ST
up to times more effective
than usual stripping aids
PEREGAL ST — the new, and amazingly effective stripping aid for vat, sulfur and direct colors — is now readily available in commercial quantities.
PEREGAL ST is a weakly cationic material which forms extremely stable cation-anion complexes with dyestuffs containing sulfo or phenolate groups in aqueous solution. The bond of attraction between these dyes and Peregal ST is so strong that the affinity of the dislodged dye in the stripping bath is permanently shifted away from dyestuff-on-cellulose to dyestuff-on-Peregal. In fact, Peregal ST may be considered a "liquid fiber" for which the dyestuffs have greater affinity than for cotton.
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Stop "Ends Down" Due To

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

Rough Roving Frame Starts

Allis-Chalmers roving frame motor accelerates slowly and smoothly... produces uniform roving ...is unaffected by air-borne lint.

YOU CAN REDUCE ends down when starting roving frames . . . cut lost production in spinning caused by thin spots in the roving yarn . . . by using Allis-Chalmers slow-accelerating roving frame motors on your roving frames, slubbers and other yarn drawing machines. This motor is built with special slow, extra-smooth acceleration characteristics to provide even tension on the roving during starting periods.

LINT-FREE *QUICK-CLEAN* DESIGN

Quick-Clean wide open frame design allows powerful fans to sweep lint and dirt in, out and away with the cooling air. Interior surfaces are smooth and hard. Large air passages are contoured to aid air flow.

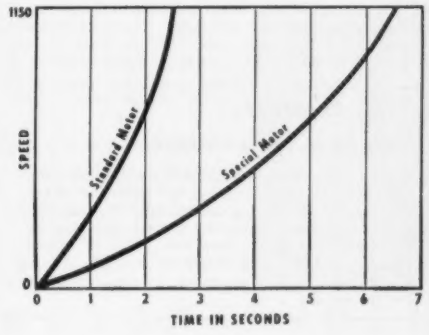
Bearings are lubricated and sealed at the factory and should need no attention for years. Grease cannot leak from the bearings to soil materials or collect dirt. Lint and dirt cannot enter bearings.

ONE SOURCE FOR COMPLETE DRIVE

Allis-Chalmers can supply your complete machine drive needs—motor, control and *Texrope* V-belt drive—from one responsible source. Allis-Chalmers application engineers, practical men with an intimate knowledge of the textile business, will help you select exactly the right combination for your particular requirements.

For complete information on Allis-Chalmers products for the textile industry, ask your Allis-Chalmers District Office representative or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3786

Quick-Clean and Texrope are Allis-Chalmers trademarks.



Notice how the Allis-Chalmers roving frame motor requires almost three times as long as a standard motor to reach full speed.

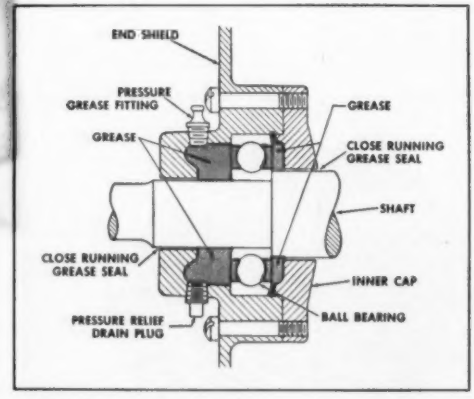
Notice thin spots in upper piece of yarn caused by rough start of roving frame. This is one of the chief causes of ends down and lost spinning production.

 For more information, write direct or use Reader Service post card.

"Our G-E ball-bearing loom motors . . .

. . . sure are easy on maintenance men"

Says Guy H. Wallace, Master Mechanic at Monroe Mills, Monroe, Ga.



LARGE GREASE RESERVOIRS surround bearings with ample supply of grease to assure safer, more continuous operation under the tough, pulsating load imposed by the loom.

"We haven't had to grease our G-E Ball-Bearing Loom Motors since we put them in" says Guy H. Wallace, Master Mechanic at the Monroe Mill, Monroe, Ga. "But more important, when it becomes necessary, we'll be able to do it—easy—with a grease-gun—without tearing down the motors."

G-E Ball-Bearing Loom Motors stand up under the rigid speed and torque requirements of today's looms. Rugged cast-iron stator frames and end shields, and totally-enclosed stator construction simplify installation and upkeep. Careful electrical design adds extra life and reliability. For more information, contact your G-E Apparatus Sales Office or write for Bulletin GEA-5858. General Electric Company, Schenectady 5, N. Y.

654-25

Years of service—
then *easy* relubrication!

Bearing lubrication is no problem here. Grease reservoirs contain four times as much grease as in conventional sealed bearing construction. Bearing housing holds grease in constant contact with bearings. Eventually, perhaps after two years of service, lubrication will be necessary to lengthen bearing life. You do it with a grease gun—without removing the end shields!

GENERAL ELECTRIC

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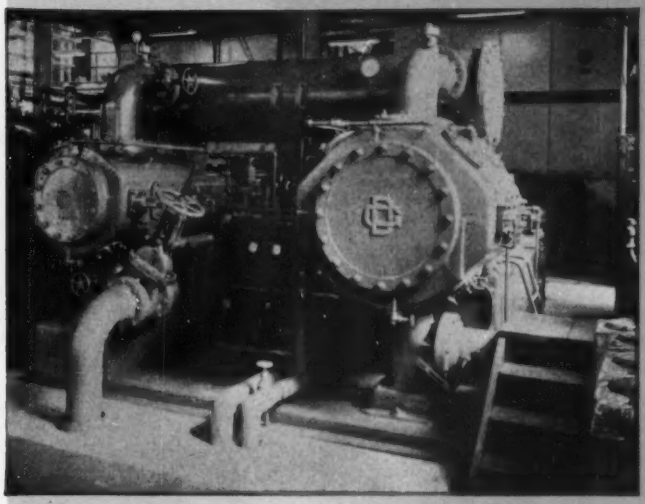


$1.25

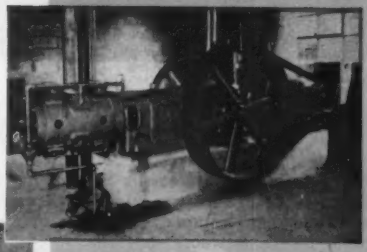
Pin Money Maintenance!

That's all it takes to keep a Gardner-Denver HA Compressor puffing away at top efficiency. One HA, for example, has been handling the full air load in a southern foundry and manufacturing plant for eight years—and has required only $10.00 for maintenance. That's $1.25 a year!

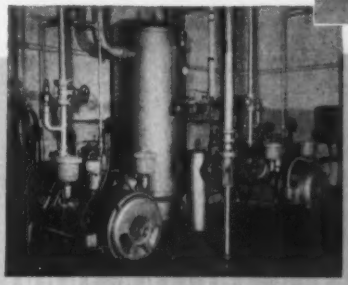
How come? A look at the soundly built power end and the reliable lubricating system will give you some of the answers.

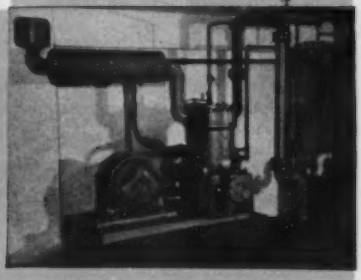
And how about operating costs? They're unusually low, too—thanks to Gardner-Denver correctly designed air cylinders and low-lift "Air Cushioned" valves.

Another dependable compressor—the Gardner-Denver RX.



Space-saving efficiency—with Gardner-Denver WB Compressors.





For low-cost compressed air in any volume—choose Gardner-Denver Compressors. Write today for full details.

SINCE 1859

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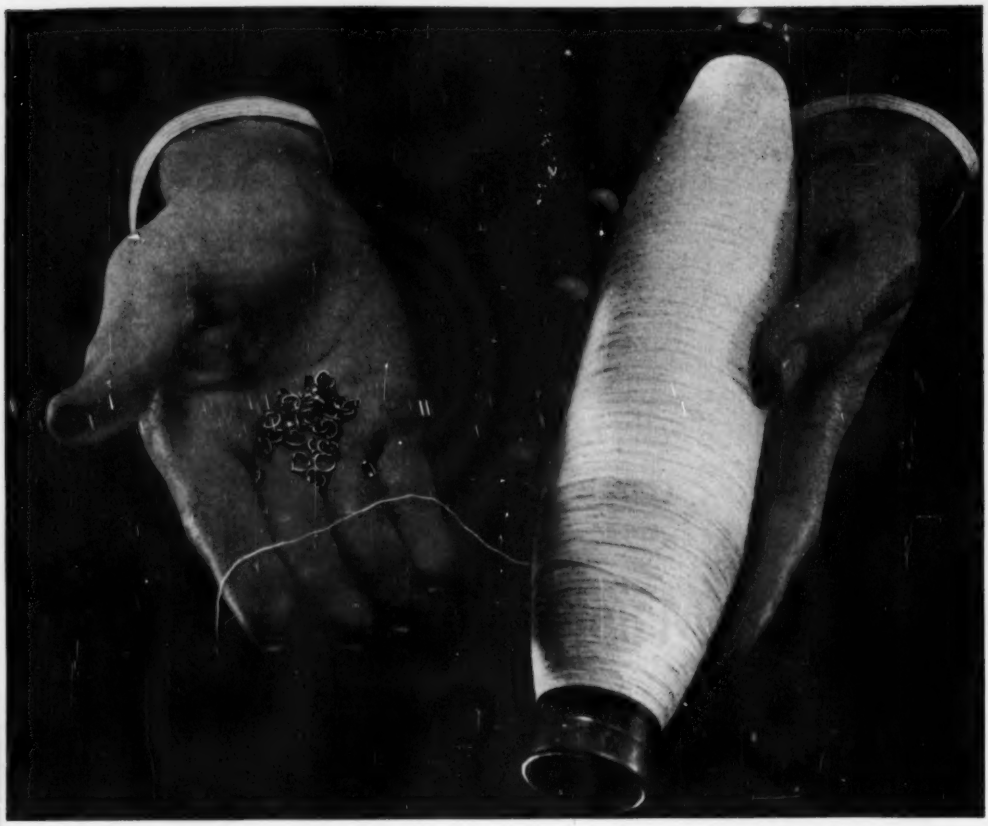
Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.

For continuous service—Gardner-Denver AA Compressors.

THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS



How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, —whether you are running conventional fibers, synthetics, or blends.

Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

•

VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 1-0737

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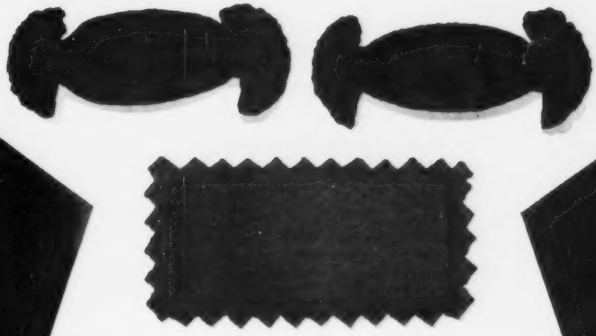
Bright Star of the Anthraquinone Series

NATIONAL ALIZARINE BRILLIANT SAPPHIRE R



This National Dye warrants your attention whenever you must produce a brilliant blue shade on worsted yarn or woolen piece goods. Its brilliance and good fastness properties recommend it as a self color or shading color. It has excellent fastness to steaming, hot pressing and water spotting. National Technical Bulletin #361 shows dyeings on yarn and piece goods, gives complete properties and application methods. Write or phone our nearest office for this new bulletin, and sample of National Alizarine Brilliant Sapphire R.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE

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For Manufacturers and Merchants

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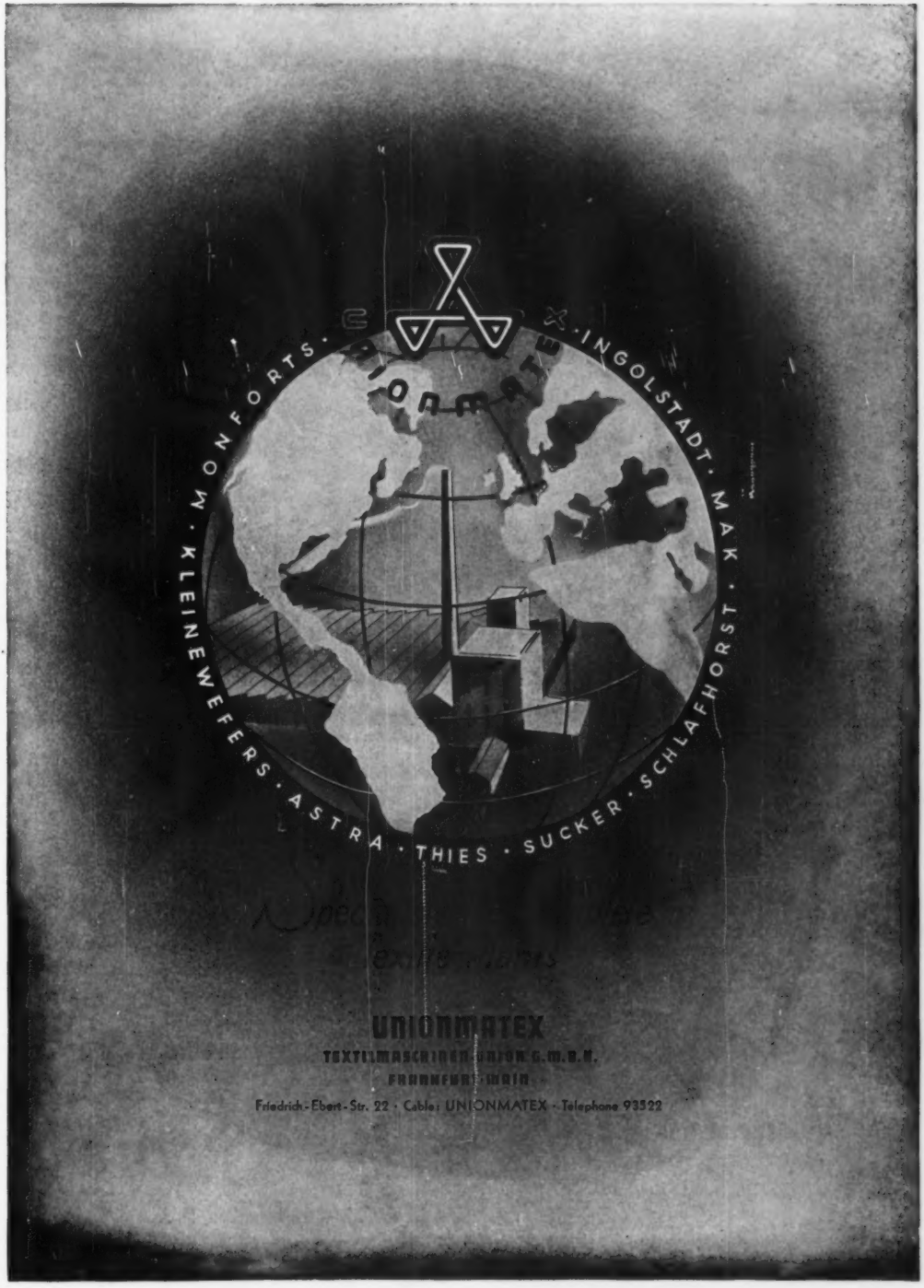
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NOPCO® anti-static oils give 'BALANCED' PERFORMANCE

Twenty years' experience supplying anti-static products for processing natural and synthetic fibers has convinced us that today's needs can be fully met only by oils that deliver "balanced" performance.

Your present anti-static oil is doing only half its job if it does not give the proper coefficient of friction, fiber to fiber cohesion, anti-static control. Every NOPCOSTAT* anti-static oil gives you all these properties and in addition affords outstanding spreadability, freedom from yellowing and rancidity, and scours out completely.

Give NOPCOSTATS a trial to get "balanced" performance. Twenty years of Nopco research, you'll find, provides the right answer.

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Your business is off—that's why I want to talk to you

I'm Clarence Moss.

I represent the Textile Division of Synthane (Laminated Plastics).

I work out of Elizabethton, Tennessee. But right now I'm speaking for all Synthane representatives.

We realize your business is slow. That's why we're picking *this* time to talk to you. When you're busy, you haven't time to spare, but now, during the lull, maybe we can get together more conveniently.

We'd like to tell you about what's current or new in bobbins or pirns, hosiery turning and examining forms, headless package tubes, redraw tubes, redraw caps, rollers and so forth. You'll probably want to know about a new collapsible bobbin for the pre-shrinking of nylon yarn. We've just been granted a patent on it.

We'd like to drop in on you soon with a boxful of samples for you to look over. We think you may want to investigate, and try out, Synthane now . . . before business picks up again.

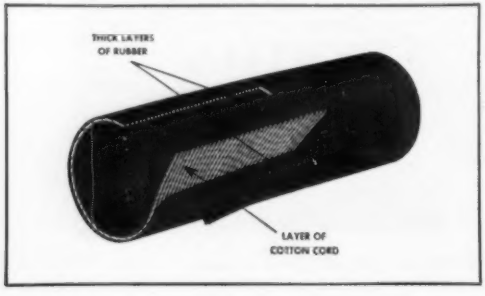
Just let our people at Oaks, Pennsylvania know you're ready to see us . . . and thanks for listening to me.

 For more information, write direct or use Reader Service post card.

These aprons are real money-savers . . . they run for years

Many mill men have been able to cut apron replacements more than half since switching to Armstrong's Accotex® Aprons.

Accotex Aprons, they report, give them six to eight years of trouble-free service . . . as much as twice the life they got from old-style aprons.



What's behind fine performance like this? It's the way Accotex Aprons are made. Their three-layer construction is an idea developed and patented by Armstrong.

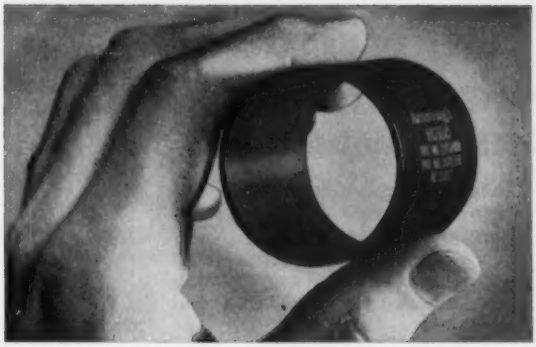
The satiny outer layer is made of a specially compounded synthetic rubber, highly resistant to scuffing. A patented finishing treatment gives it long-lasting smoothness and guards against cracks and rough spots.

The center layer is a sturdy cord interliner. It absolutely prevents stretching or curled-up edges.

The inner layer is a tough synthetic rubber. It resists the abrasion of millions of trips over the nose bar.

Vulcanized together, these three layers combine to make an apron that runs clean for 6 to 8 years—as fine an apron as can be made today.

If you'd like to see for yourself how these aprons perform, why not arrange for a test installation? Accotex Aprons are made to fit all long-draft equipment. Just call your Armstrong representative or write Armstrong Cork Co., Textile Products Dept., 8312 Arch Street, Lancaster, Pa. Available for export.

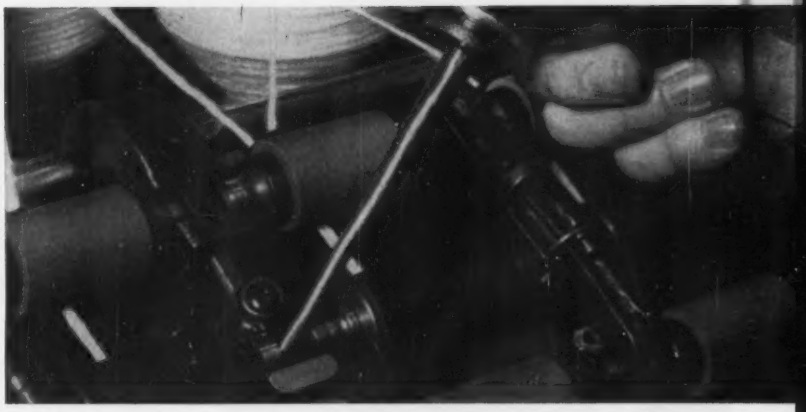


NO SEAMS. Inside and out, Armstrong Aprons have no seams to cause irregularities in the yarn. Seamless construction insures against cracks or breaks and adds running life to the apron.

SUPER-FLEXIBLE. Accotex Aprons have the extra flexibility needed on single-apron systems to hug the nose bar closely and insure smooth slip-roll action.

SATIN SMOOTH. Precision grinding to exact dimensions makes Armstrong's Accotex Aprons smooth. They stay smooth, too—you'll get years of dependable, trouble-free running without cracks or rough spots.

OIL RESISTANT. Accotex Aprons don't absorb oil or soften from exposure to oils, dyes, and commonly used textile solvents. They won't sweat under any normal mill condition. Try Accotex Aprons on a test frame in your own mill and see how clean-running they really are.



ARMSTRONG'S ACCOTEX APRONS

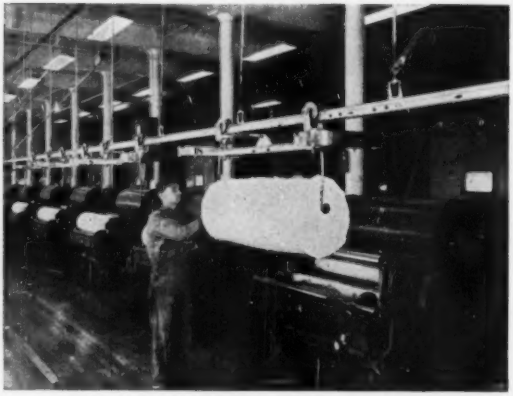
One of Armstrong's complete line of textile mill supplies

AMERICAN MONORAIL

- **INCREASES PLANT CAPACITY AND PRODUCTION**
- **REDUCES HANDLING COSTS, DAMAGE AND LOSS**

American MonoRail Engineers can show you how to get more profitable production out of your plant by systematizing material handling. Let them show you how to convert lost ceiling space to profit—how to eliminate obstructive storage around machines—lessen worker fatigue—reduce heavy load accidents—stop damage to product in motion.

Bring us your handling problems —American MonoRail can provide the equipment best suited to your needs.



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A 56 page book showing how American MonoRail Engineers have successfully solved other companies' handling problems.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE CLEVELAND 7, OHIO

Only the right combination of...

★ resiliency

★ uniformity

★ toughness

★ gives you lowest cost per loom per year

The running and wearing qualities of Denman Pioneer pickers have been developed to the *exact* degree at which maximum loom economy becomes possible . . . *correct hardness,* to assure long, tough picker service without damaging shuttle points . . . *outstanding resiliency,* to cushion heavy shuttle blows without damage to loom parts . . . *absolute uniformity,* to insure perfect shuttle throw without excessive wear.

For operating efficiency, combined with total loom economy, most mill men choose Denman above all other pickers.

Made by

DENMAN Tire and Rubber Co.
Exclusive Sales Representative

The TERRILL MACHINE CO., Inc.

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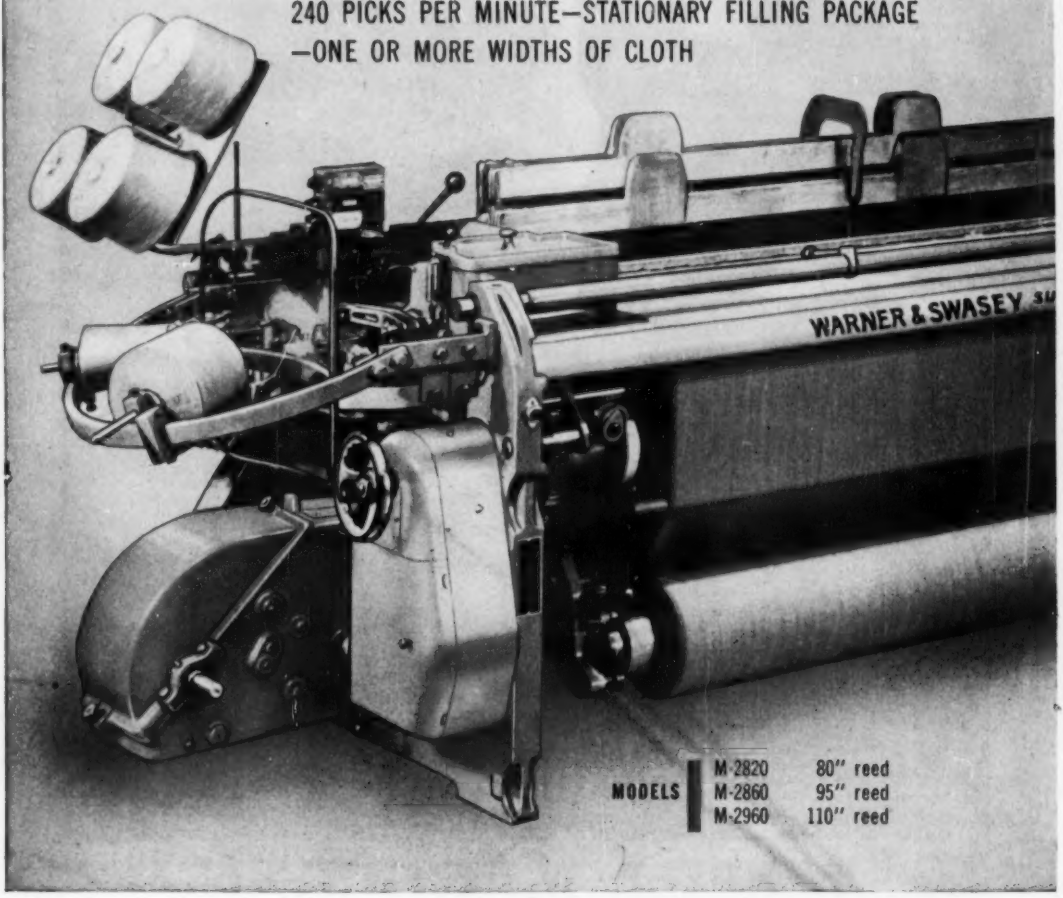
NOW-an entirely new

WARNER & SWASEY—SULZER

weaving machine

240 PICKS PER MINUTE—STATIONARY FILLING PACKAGE
—ONE OR MORE WIDTHS OF CLOTH



MODELS		
	M-2820	80" reed
	M-2860	95" reed
	M-2960	110" reed

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER &

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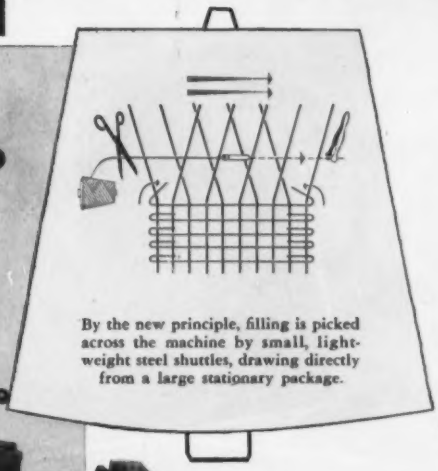
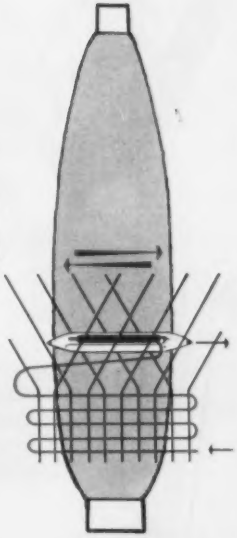
principle of weaving!



By the new principle, filling is picked across the machine by small, light-weight steel shuttles, drawing directly from a large stationary package.



In conventional weaving, filling is inserted by a heavy bobbin-carrying shuttle that moves back and forth across the machine.

A WEAVING MACHINE that employs a principle completely new in the history of weaving! A machine that uses a succession of light-weight steel shuttles to pull filling from a large stationary package—speeding production of fine fabrics—eliminating many costly operations of the conventional bobbin-shuttle combination!

In actual mill production—on worsteds, woolens, spun synthetics and blends—Warner & Swasey-Sulzer Weaving Machines have piled up impressive production records. They have produced better quality, more lofty fabrics—*faster*—while drastically cutting costs because of their many operational advantages.

You've probably already heard about these revolutionary new machines. You'll be hearing a lot more! So if you'd like a preview on how they can affect your mill's operations, call in your Warner & Swasey Field Representative and get all the facts.

BRANCH OFFICES
61 Rivulet St., North Uxbridge, Mass.
6910 Market Street, Philadelphia, Pa.
Candler Building, Atlanta, Ga.
1820 Browning Ave., Charlotte, N. C.

SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

1 PURPOSE

NEW C&K 2 x 1 BOX FILLING-MIXING LOOM equipped with rotary magazine . . . and END CAM.
NEW C&K 2 x 1 BOX FILLING-MIXING LOOM equipped with rotary magazine . . . and HEAD MOTION.

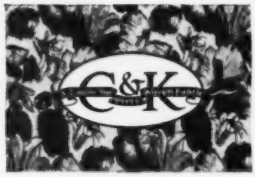
. . . Means the job is
"KO'd" Faster . . . with

C&K's *NEWEST* FILLING-MIXING LOOMS

To knock out single-color fabrics by the mile . . . that's the job at which these new C&K *Filling-Mixing* Looms beat all comers.

Proven products of C&K's long experience in building multi-color, multi-purpose looms with the call box feature, *these new single-purpose models now complete the line of Crompton & Knowles Filling-Mixing Looms.*

So if any part of your production is single-color, then there's just one single thing to do . . . *see C&K today.*

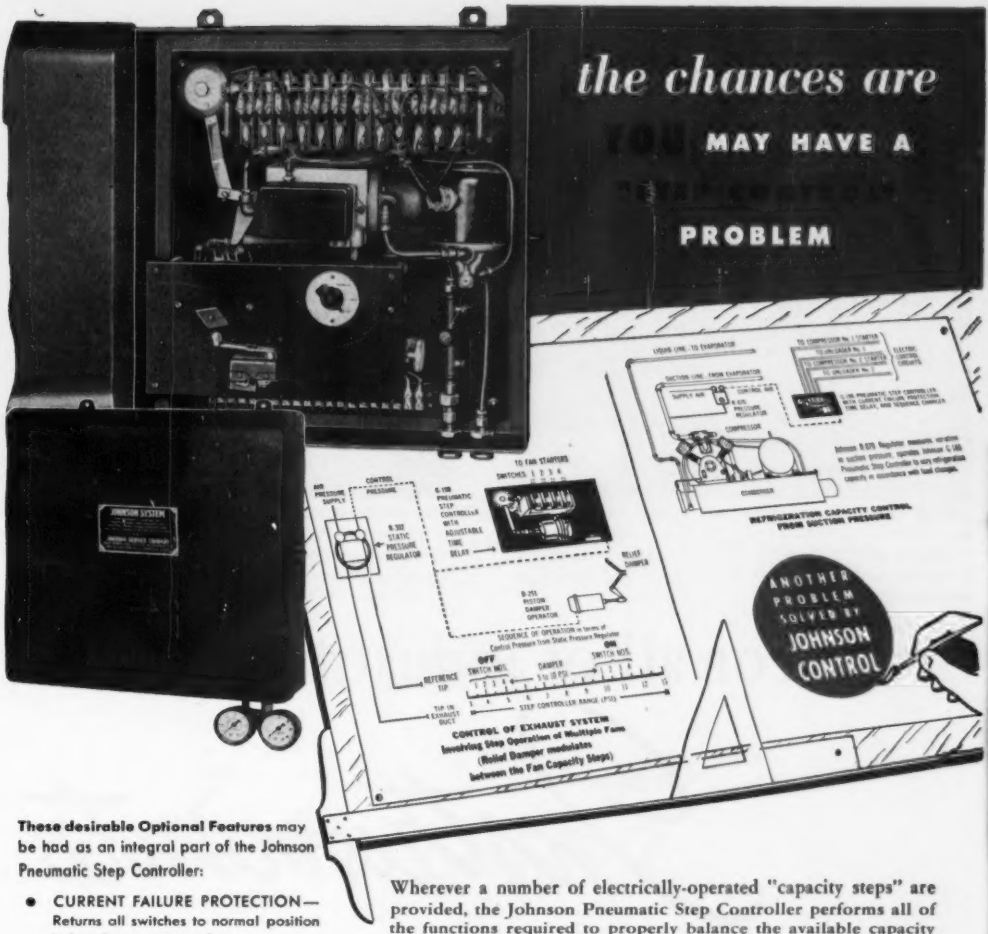


This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R.I.



These desirable Optional Features may be had as an integral part of the Johnson Pneumatic Step Controller:

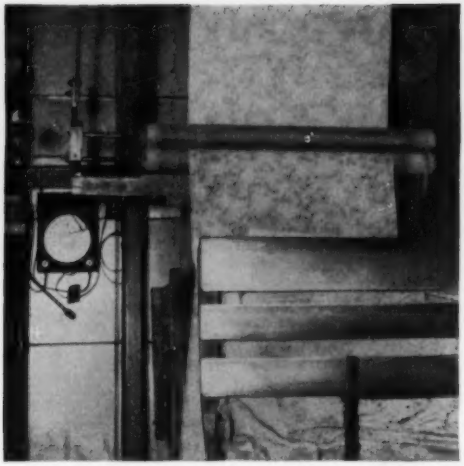
- CURRENT FAILURE PROTECTION—Returns all switches to normal position in less than one second.
- TIME DELAY MECHANISM—Provides adjustment, to any desired period up to 12 minutes, of the time required to operate all switches. Then, on current failure or at "start-up", the predetermined time interval must elapse between the individual steps of control.
- AUTOMATIC or MANUAL SEQUENCE CHANGER—Varies the succession of the steps of control in order to equalize the wear on equipment.

Wherever a number of electrically-operated "capacity steps" are provided, the Johnson Pneumatic Step Controller performs all of the functions required to properly balance the available capacity and the load. This unique, single unit, operated by a Johnson pneumatic temperature, humidity or pressure regulator, actuates separately adjustable, single-pole, double-throw switches in any desired sequence. It is available in 4, 6, 8 and 12-switch models and eliminates the disadvantages of a series of separate pressure switches. Such difficulties as providing sufficient space, maintaining separate delicate mechanisms, adjusting and retaining adjustment are completely avoided.

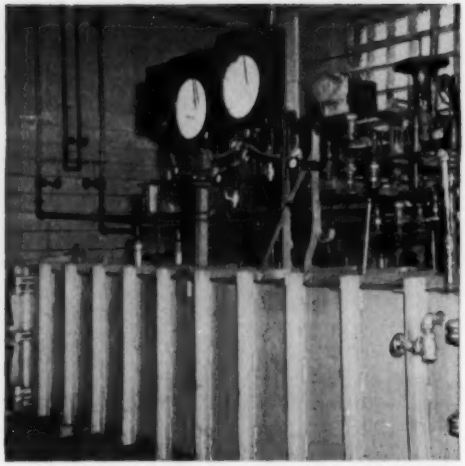
Yes! The CHANCES ARE that the Johnson Pneumatic Step Controller will solve your sequence control problems. Ask a nearby Johnson engineer to discuss the application of this interesting device. Bulletin G-180 presents the essential features. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885



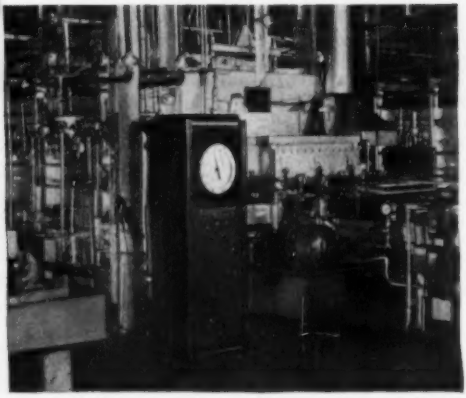
$30,000 SAVING IN ONE YEAR *was effected in this textile finishing mill . . . with the help of the Brown thermometer controlling the temperature of the print dryer. Controlled condition drying eliminated jagged fabric rips which had resulted in absolute waste.*



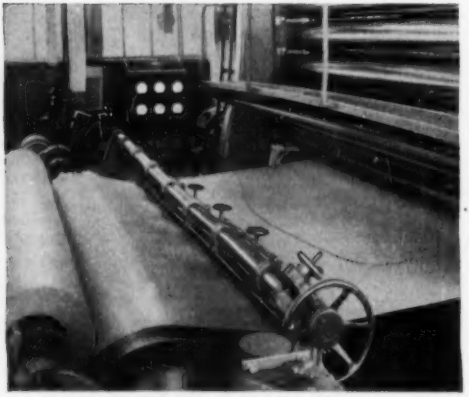
DUAL USE OF RETORT, *thanks to custom-built control system, permits using same equipment for boiling meats that is used for pressure-cooking glass-packed products. Cook time has been cut; glass breakage eliminated; labor saved; and production increased for both jobs.*

For all of industry... *especially*

Instruments



PREVENTING COSTLY ERRORS *in heat treatment is the job of this Surface Combustion dew point recorder which utilizes an* **ElectroniK** *instrument. Carburizing, nitriding, dry cyaniding, and carbon restoration are affected by the dew point of gases employed, and have a profound effect upon metallurgical results.*



ALL BTU'S ACCOUNTED FOR . . . *in this machine room. Brown integrating flow recorders keep close track of every pound of steam . . . give speedy indication of excessive steam consumption. A variety of instruments hold operating costs at a minimum throughout pulp and paper mills.*

OPTIMUM EFFICIENCY *for textile fiber or fabric drying is dramatically illustrated by this combination of a gas-fired loop dryer and modern instrumentation. A Brown Thermometer Controller and* Protectoglo *Combustion Safeguard System help maintain ideal processing conditions...regardless of ambient temperature and humidity.*

for the textile industry

reduce costs

ECONOMICAL use of power and raw materials, elimination of waste and rejects, and improved product quality . . . all add up to reduced costs when the controlled chain reaction of textile processing explodes into increased profits.

Proper control for a loop dryer is a good case in point.

Controlled dryer temperature results in operation at the ideal heat input . . . conservation of power and raw materials. Controlled dryer temperature results in correct regain and elimination of tears . . . fewer reruns and less waste. Controlled dryer temperature results in level drying that prevents dye migration . . . uniform high quality product.

Thus it is clear that the maintenance of low-cost operation is closely related to the all-important need for high quality and a favorable competitive position. And Brown instruments are continuing to make timely contributions to low cost operation throughout the textile industry.

Our local engineering representative will welcome the opportunity to discuss all of your instrumentation requirements . . . is prepared to recommend control systems that are designed to meet the specific needs of individual operations. Call him in today, he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa. Service facilities available in more than 55 cities in the United States.

MINNEAPOLIS

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BROWN INSTRUMENTS

First in Controls

● *Important Reference Data*

Write for a copy of new brochure, "Tomorrow is Today" . . . and request Data Sheets for specific textile processing operations.

"Tycol Alweave cuts spindle drag... reduces thread breakage... jumps production"

Right! The stability and lubricating value of Tycol Alweave Spindle Oils assure minimum wear and low power consumption, all helping to step up production by reducing drag and thread breakage.

A wide range of Tycol Alweave Textile Oils is specially designed in both mineral and compounded grades to cut costs in other processes in your mill.

For further information about Tycol Alweave Textile Oils, write, wire or phone your nearest Tide Water Associated office today.

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17 BATTERY PLACE · NEW YORK 4, N.Y.

SEND FOR A FREE COPY OF "TIDE WATER ASSOCIATED LUBRICANIA"

For more information, write direct or use Reader Service post card.

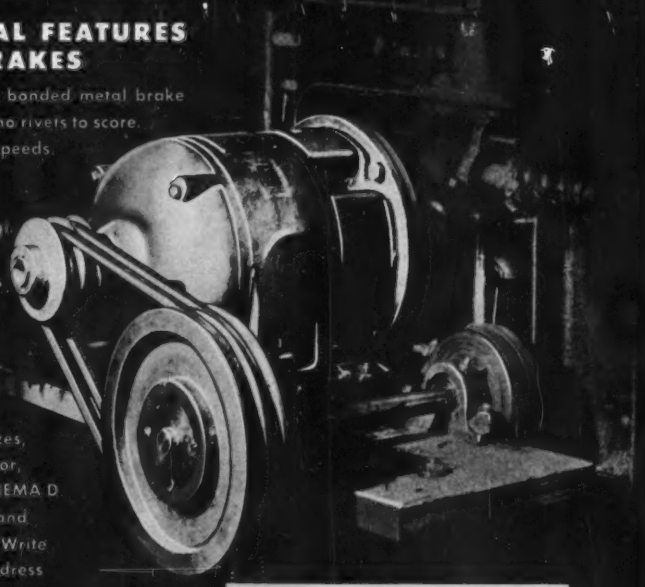
The ELLIOTT Crocker-Wheeler brake motor

says STOP to product damage

This narrow fabric loom is making zipper tape, and when the loom is stopped for any reason "stop-marks" would normally appear on the tape, caused by coasting of the loom. This is prevented by the Elliott Crocker-Wheeler brake motor, which halts the operation in a single revolution. No coasting, no "stop-marks", an unblemished product.

SOME EXCEPTIONAL FEATURES OF C-W BRAKES

Brake discs are all metal, with bonded metal brake linings. Metal to metal contact, no rivets to score. Sustains higher pressures and speeds. Wear is largely eliminated. Discs are unaffected by heat, cold, dampness, salt water, fungi. They dissipate heat most rapidly. Unit is compact, and fits in limited space. Wrap-around cover permits easy access all around. Removable without need for extra end space. Manual release optional. C-W brakes are available in eight sizes, as part of any C-W integral motor, or separately for mounting on NEMA D flange motors frames 203-326, and C face motors, frames 364-405. Write for the Brake Motor Bulletin - address Elliott Company, Jeannette, Pa.



Elliott Crocker-Wheeler brake motor on loom at plant of Wm. T. Carson Co., Philadelphia. Note how compactness of the unit enables it to fit into close quarters. Brake can be inspected while operating by removing wrap-around cover.

ELLIOTT Company
CROCKER-WHEELER DIVISION
AMPERE, N. J.

Branch Offices and Representatives in Principal Cities

Elliott APPROVED service shops cover the country • GENERAL OFFICES AND MAIN PLANT, JEANNETTE, PA.

What's corn doing up in the rafters?

Basic research in corn helped put it up there... in the form of fibre glass insulation.

Certain types of dextrines are needed to produce the glass fibre. These particular dextrines are developed by research in corn. Corn fills a myriad of industrial needs . . . our continuing basic research in corn serves all American industry . . . serves you.

Corn products in textiles

In the textile field starches, gums and dextrines provide superior formula ingredients for many textile processes. New techniques involving the use of corn products are being developed as part of a continuing research program at Corn Products Refining Company.

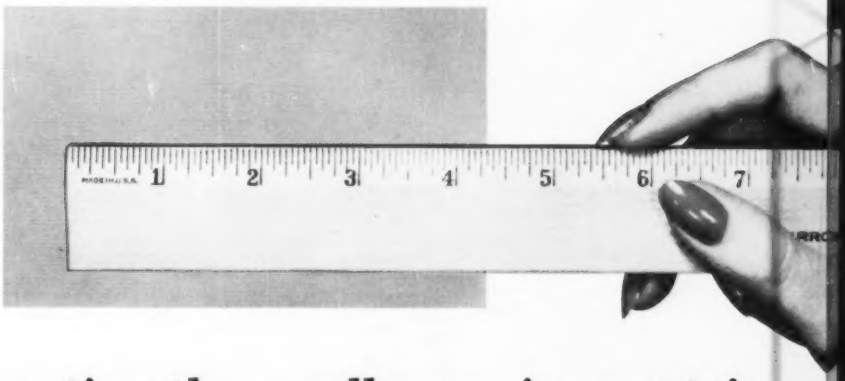
If you have a production problem why not check with Corn Products. A complete line of corn products for every purpose is available. Technical service is yours . . . no obligation, of course.

CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.
Manufacturers of

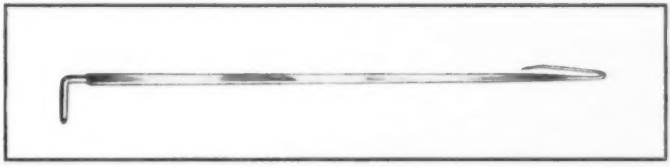
GLOBE® brand dextrines, gums **GLOBE® brand starch** **EAGLE® brand corn starch**

the finer the gauge

the smaller the stitches



the more exacting the needle requirements!



Specify TORRINGTON NEEDLES on your next order. You'll see the difference in performance made by their true temper, smooth finish and their precision.

THE TORRINGTON COMPANY, Torrington, Conn., U. S. A.
Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif. Broadgate House, 7-10 Eldon St., London, E.C. 2, England

TORRINGTON

SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

tight quarters are no problem

Torrington Needle Bearings have smaller OD in relation to rated radial load capacity than any other type of anti-friction bearings.

In many products, compact Needle Bearings allow reductions in size and weight of housings and related assemblies. In others, they permit the use of larger, stronger shafts without increasing housing bores.

Whatever *your* space problem, it will pay you to investigate the combination of high capacity and small OD offered by Torrington Needle Bearings. Our engineers will be glad to assist you.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.
District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

Ideal

No Other Drawing Rolls Match Ideal's Performance

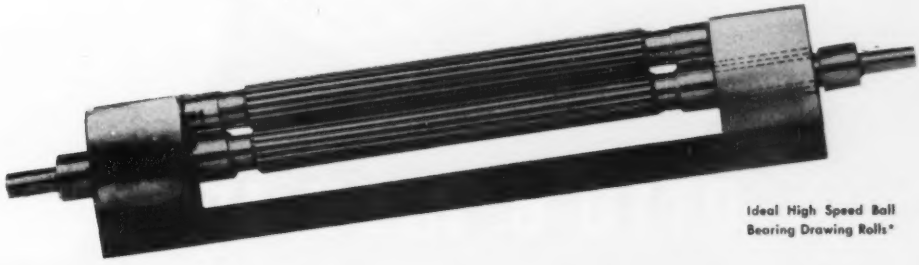
Consider Production: Ideal Drawing Rolls will operate continuously at high speed. Two Ideals outproduce three ordinary ones.

Consider Maintenance: Ideal Drawing Rolls are automatically and permanently aligned and synchronized. Ideal ball bearing spacing units won't wear. Ideal hardened and ground flutes won't nick and burr. Dismantling for cleaning and reconditioning is necessary only at intervals of one or two years. Ideals seldom need maintenance attention of any sort . . . and consider the down-time this saves.

Consider Quality: Ideal Drawing Rolls never bruise or shear stock, or cause thick or thin places in the sliver. They give you greater breaking strength and almost perfect evenness — even with single process drawing.

And Consider First Cost: You can equip your frames with these superior rolls *for less money than if you bought ordinary rolls,* because you need only two-thirds as many..

Consider production, maintenance, quality, and first cost, and you'll investigate Ideal High Speed Ball Bearing Drawing Rolls . . . and buy them. No other drawing rolls will match their performance.



Ideal High Speed Ball Bearing Drawing Rolls*

Ideal Industries, Inc.
Bessemer City, N. C.

* Patented

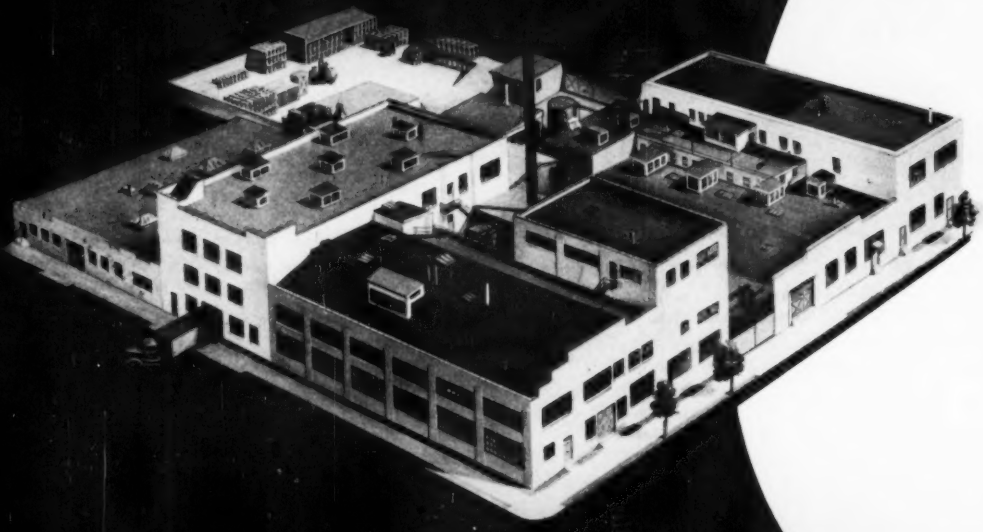
Something to Consider . . .

CHEMICALS

O·M·B

INC.

DYES



OTTO B. MAY, INC.

198 Niagara Street Newark 5, New Jersey

for your Printing and Dyeing needs

27 Klipfat DYESTUFFS

19 Fast Color SALTS

26 Fast Color BASES

Your inquiries and correspondence are invited.

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A Guarantee

...To eliminate fog and condensation in your dyehouse

Know how your dyehouse fogs up in wintertime? Well, take a look at these pictures of the Clearwater Finishing Company, Old Fort, North Carolina, *taken in the middle of the winter.*

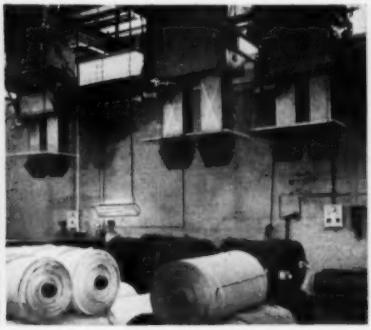
Credit for clearness at Clearwater goes to Carrier. The whole ventilation job, including fans, heat diffusers and all duct and other metal work, was designed and built by Carrier.

Dyehouse ventilation is tricky. You have to know what you're doing . . . like building up internal pressures, supplying the *right* amount of heat, and providing cool spots for workers.

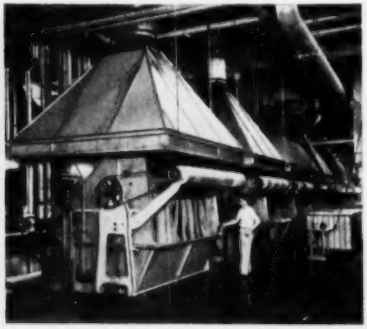
And no two jobs are alike. So if you really want a dry dyehouse, call in Carrier. We'll give you a guarantee, in writing. We'll look over your plant and give you an estimate. Carrier Corporation, Syracuse, New York . . . *for 50 years—the people who know air conditioning best.*

Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING



Blower outlets provide cool spot for workers. All metal work was done in Carrier's shop at Atlanta. Note accessible controls on wall.



Carrier designed and built exhaust hoods over dyebacks take clouds of steam out of Clearwater plant, one of the newest dyehouses in the South.

For more information, write direct or use Reader Service post card.

another good reason why you find

LIVERMORE

in the LIMELIGHT:

KNIVES are of Malleable Iron, Hardened. CONNECTORS have quick adjustment; all parts hardened. ROCKER ARMS are of Malleable Iron — locking stud permits easy installation or removal. JACKS are all steel to eliminate breakage, with hardened Rolling Boss. SPRING JACK BACK AND HOOKS have smooth and hard contact surfaces. GRATES are of malleable iron, eliminating tooth breakage.

Using HFL IMPROVED DOBBY HEADS,

one mill had

NO DOWN TIME IN 2 YEARS

due to dobby head failure.

H. F. LIVERMORE CORPORATION 65th ANNIVERSARY 1887 1952 IMPROVED LOOM PARTS

STILL GIVING EXCELLENT SERVICE, with no sign of wear on any parts, a mill installation of HFL IMPROVED DOBBY HEADS has operated constantly for two years without any replacement of parts!

This appears to be a new record for dobby head life.

FORMER DOWN-TIME LOSSES are now converted into production gains . . . with no weaving imperfections resulting from dobby head failure, no repair or replacement of parts over long periods, when your looms are equipped with HFL IMPROVED DOBBY HEADS.

HFL IMPROVED LOOM PARTS insure minimum cost per yard of production.

Write for circular

HFL

IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

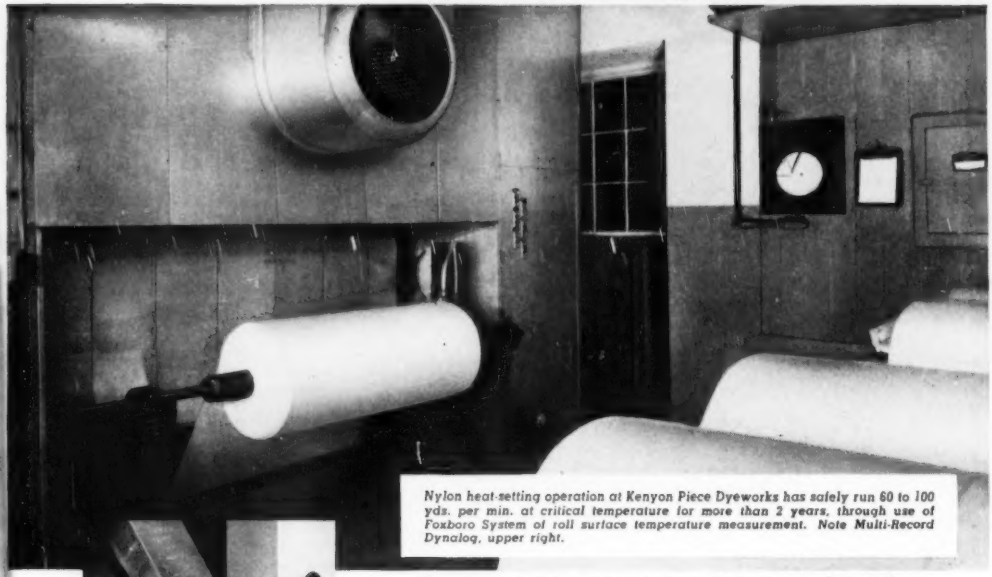
ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

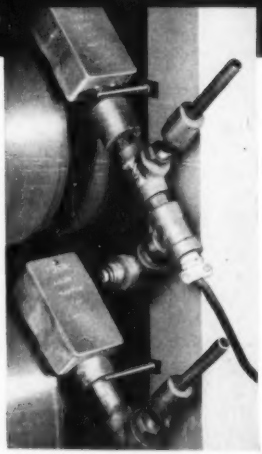
SOUTHERN DIVISION
GREENVILLE, S. C.

New Efficiency for Hot-Roll Processes

...through continuous measurement of roll surface temperatures



Nylon heat-setting operation at Kenyon Piece Dyeworks has safely run 60 to 100 yds. per min. at critical temperature for more than 2 years, through use of Foxboro System of roll surface temperature measurement. Note Multi-Record Dynalog, upper right.



Foxboro Measuring Heads on National Drying Machine Corporation Nylon fabric heat-setting machine at Kenyon continuously measure roll surface temperatures.

A UNIQUE NEW FOXBORO temperature measuring system now is making possible radically improved results in operating hot-roll equipment such as calenders, slasher cylinders, contact-type cylinder dryers, and pressing machines.

Based on an exclusive new-type Foxboro measuring head, coupled with the instantly-responsive Dynalog Electronic Recorder, this system provides continuous, precise records of roll surface temperatures that permit closer control than ever before obtainable.

One typical example is the Nylon fabric heat-setting operation at Kenyon Piece Dyeworks, Kenyon, R. I. Here, six Foxboro roll surface measuring heads on the 6-roll heat-setting machine are connected with a 6-point Multi-Record Dynalog*. The resulting accurate records permit uniformly safe heat-setting at 435°F., even though the melting point of nylon is only 465°F.

If you have a critical hot-roll process, investigate the unique Foxboro System for measuring roll surface temperatures. Write for Bulletin 405. **The Foxboro Company, 8412 Neponset Ave., Foxboro, Mass., U. S. A.**

*Reg. U. S. Pat. Off.

FOXBORO
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RECORDING · CONTROLLING · INDICATING
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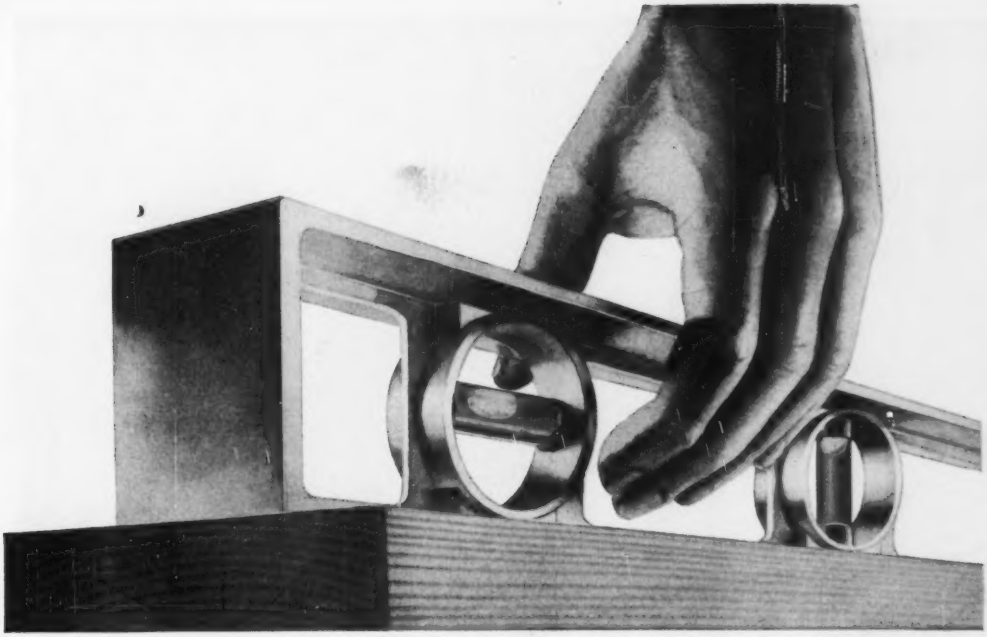
FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND



For Fast, Effective Leveling–

CALSOLENE OIL HSA!

For Exceptional Dispersing, Wetting and Stability

For addition to dye liquors you couldn't use a finer dispersing, wetting and leveling agent!

CALSOLENE OIL HSA is outstandingly stable in hard water and under both acid and alkaline conditions.

In the preparation of goods to be waterproofed, CALSOLENE OIL HSA is an excellent choice, since it has no residual rewetting properties.

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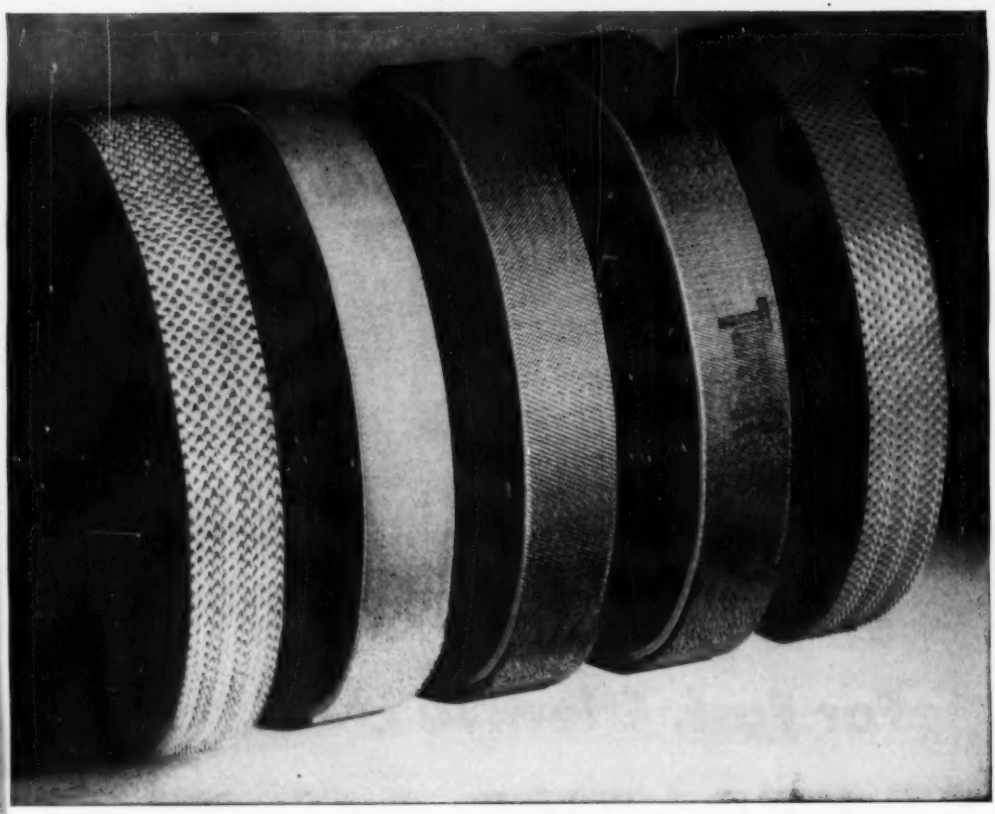
ARNOLD, HOFFMAN & CO., INCORPORATED · EST. 1815 · PROVIDENCE, R. I.
Offices: Charlotte, Cincinnati, New York, Teterboro, Providence
Plants: Charlotte, N. C. · Cincinnati, Ohio · Dighton, Mass.

Full details on this superior product will be provided on request.



A Superior Product for EVERY TYPE of Carding

TUFFER Card Clothing

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

You can be sure of getting the Card Clothing best suited to your needs when you ask for a Howard Bros. recommendation. Our factory makes a superior product for every carding operation. Because we are equipped to make all types of Card Clothing from the coarsest size of wire to the finest, we feel well qualified to help you solve any of your carding problems. To be *sure* — specify TUFFER . . . made by our patented Tufferizing process giving you absolute precision and uniformity.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Georgia and Gastonia, N. C. **Branch:** Philadelphia, Pa.

Direct Representation in Canada

A-3

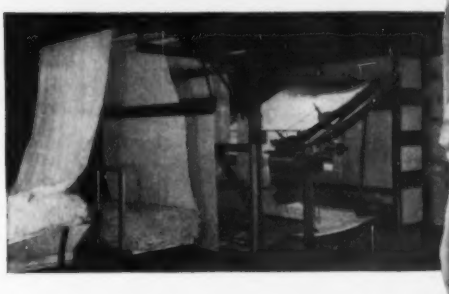
. . . IT PAYS TO SPECIFY TUFFER CARD CLOTHING

HUNTER *equipment*

safeguards quality at Milliken

Milliken fabrics are favored by leading designers who demand the finest materials as background for quality garments. To safeguard its excellent reputation Deering Milliken & Co. maintains constant quality control throughout its entire operation.

It is only natural, therefore, that you'll find Hunter equipment in Milliken plants. In fine mills throughout the world Hunter "plus production" equipment is used to finish a wide variety of *worsteds, woolens, synthetics, blends* and *cottons.*



The unique Hunter High Speed Uniform Tenter Dryers produce more yardage, on a wide variety of fabrics, at lower steam, labor and power costs. Deering Milliken and other leading mills everywhere use these efficient pin tentering units for faster, more uniform drying. Send for BULLETIN UTD.

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair . . . rapid parts delivery

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BUILT BY HUNTER . . . IT'S DEPENDABLE

MACHINE COMPANY

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

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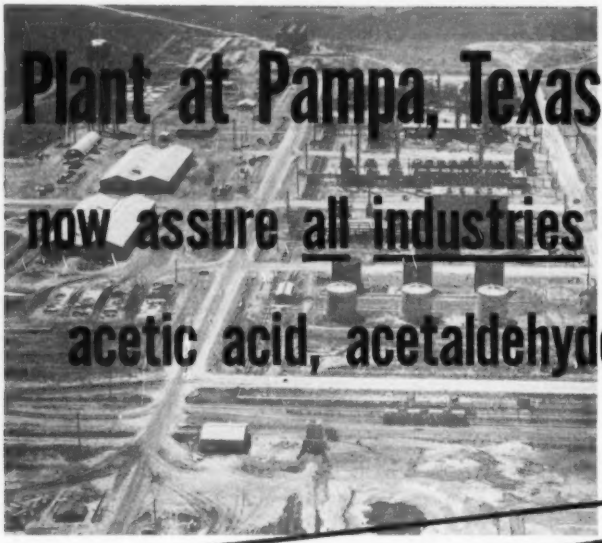
Acetyl Chemicals

New Plant at Pampa, Texas . . now assure all industries a acetic acid, acetaldehyde,



Acetic Acid

(Glacial U.S.P.)

The combined production of Bishop, Pampa, and the Canadian affiliate at Edmonton, Alberta, will give acetic acid users one of the most flexible and dependable sources for this basic chemical. Convenient distribution points will make this increased output immediately available in principal industrial centers throughout the country.

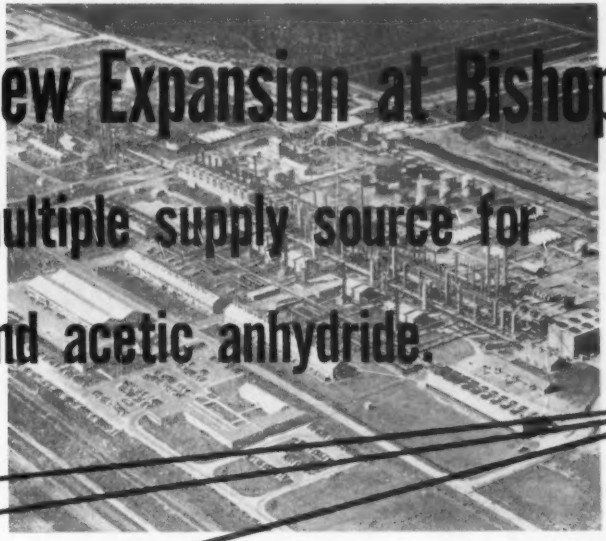
Acetaldehyde

Manufacturers of insecticides, new synthetics, pharmaceuticals and other important products can confidently look to Celanese for their present and future requirements of acetaldehyde. Its controlled quality and stable price will also make Celanese* Acetaldehyde of prime interest in many new applications and processes.

by Celanese

New Expansion at Bishop, Texas

multiple supply source for and acetic anhydride.



CH_3CO

Acetic Anhydride

The Celanese expansion program assures immediate volume supplies of acetic anhydride to all industries. With the opening of the new producing units, Celanese now has the productive capacity necessary to meet current demands and anticipate the future needs of American industry for acetic anhydride and other acetyl chemicals.

For complete data, samples, prices and technical assistance, write: Celanese Corporation of America, Chemical Division, Dept. 571-L, 180 Madison Avenue, New York 16, N. Y.

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Acetic Acid
Acetic Anhydride
Butyl Alcohols
n-Propanol
Methanol
Acetaldehyde
Formaldehyde
Formaldehyde in Alcohols
Paraformaldehyde
n-Propyl Acetate
Butylene Glycols
Dipropylene Glycol
Propylene Glycol
Acetone
Propylene Oxide
Tricresyl Phosphates
Special Solvents

Celanese* CHEMICALS

*Reg. U. S. Pat. Off.

CALL

the Houghton Man

WRITE

the Houghton Man

WIRE

the Houghton Man

3 Easy Ways to get answers to your Wet Processing Problems

Textile men realize there is no such thing as an "Ideal" surface active agent—one that does every processing job in a mill. So they're solving their processing problems in a way that makes good sense . . .

More and more mill operators are asking the Houghton Man for help in choosing the *right* surface active agent for various scouring, dispersing and wet processing operations. You will produce better fabrics, trim processing costs, and speed production substantially when you choose the one best suited for the job.

Houghton has a force of technically trained men to help you do that. They're backed by extensive laboratory and research facilities. Manufacturing plants located in principal industrial areas serve to speed this on-the-job service.

Next time the Houghton Man calls on your mill ask him to put our knowledge of surface active agents to work for you. One or more of these cost-saving products can help you make your fabrics better, or faster, or at lower cost . . .

CERFAK	SURFAX
for effective Detergency	***for Wetting or Re-Wetting***
When detergency is the chief factor in your processing, stick to the "Cerfak" group. Each of these seven "Cerfak" products was developed after long study, for particular processing jobs. This wide range permits you to pick the one that fits the job best.	When exceptionally good wetting and re-wetting agents are needed, select one of the "Surfax" products. They possess little or no detergency value. In applications where both detergent *and* wetting action are desirable, there's a "Cerfak" available for excellent results.

HANDY HOUGHTON FOLDER

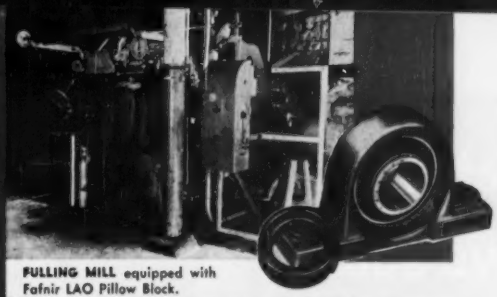
helps you choose the agent with detergent and/or wetting properties for specific applications. Ask the Houghton Man for a copy or write to E. F. Houghton & Co., Philadelphia 33, Pa.

. . . products of

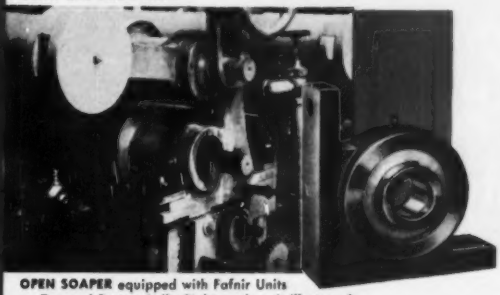
E. F. HOUGHTON & CO.

PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

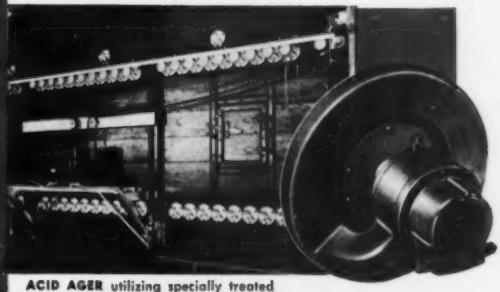


FULLING MILL equipped with Fafnir LAO Pillow Block.

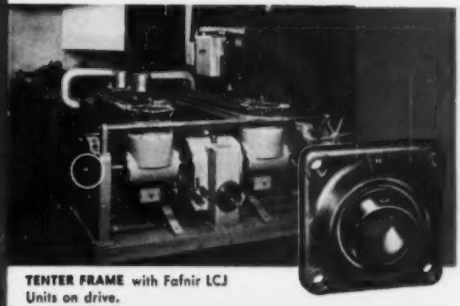


OPEN SOAPER equipped with Fafnir Units on Top and Bottom Rolls. Right angle unit illustrated.

DRY CAN RANGE equipped with Fafnir Dry Can Units. Floating type illustrated.



ACID AGER utilizing specially treated Fafnir Flange type Ager Boxes.



TENTER FRAME with Fafnir LCJ Units on drive.

TURNING POINTS to timely economies in Finishing Operations

If you are interested in reducing costs as well as increasing production, take a second look at Fafnir Ball Bearing Textile Units from this angle.

Like other textile mill operators, you may be able to avoid the use of special bearings and their attendant heavy costs by installing Fafnir Textile Units. There are several standard units expressly designed for textile finishing machines. With Fafnir Units, you have no special housings or lubricating systems to consider, no costly machining . . . installation is a matter of minutes, not hours. Where these units have replaced plain bearings, mill men are realizing several timely operating economies . . . lower power consumption, less frequent lubrication, less lubricant, fewer roll settings, a reduction in material spoilage and machine downtime.

Consider AGERS as a specific example . . . Fafnir Textile Units help to make possible a free, uniform pull over the rolls. In addition, these units are designed to retain lubricant in high temperatures. They're made to resist the effects of corrosive atmosphere too . . . thus cutting down on maintenance and replacement costs.

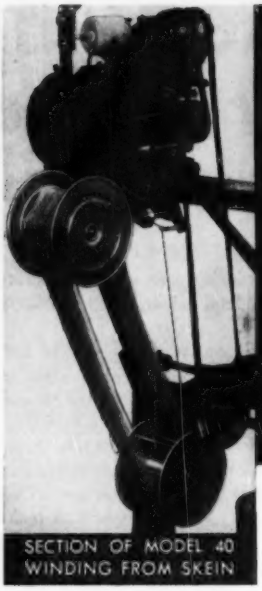
Get aquainted with the complete line of Fafnir Textile Units and its possibilities for producing economies in your plant finishing operations. Write for catalog of Textile Units. The Fafnir Bearing Company, New Britain, Conn.

Other Finishing Machines where FAFNIR Ball Bearings are used

- Printing Machines
- Dryers
- Button Breakers
- Dye Paddles
- Dye Kettles
- Dye Jigs
- Folding Machines
- Starch Mangles
- Squeeze Rolls
- Calender Stacks
- Calender Chasing Rolls

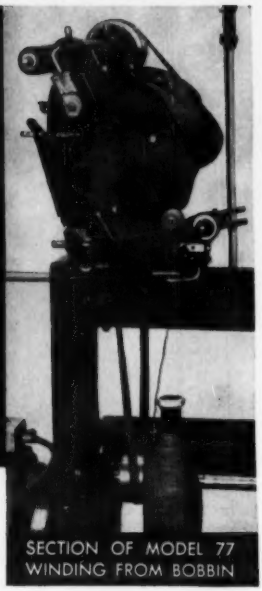
FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA



SECTION OF MODEL 40
WINDING FROM SKEIN

Carpet Mill will save about $17,000.00 per year with Foster heavy duty winders



SECTION OF MODEL 77
WINDING FROM BOBBIN

One leading carpet mill, which has recently installed Foster Model 40 and Model 77 Winders, estimates that it will save approximately $17,000.00 per year by this move. Here's why: —

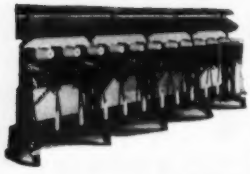
1. These Winders will give about twice as much production per hour as the old spoolers.
2. They also put twice as much yarn on a package, although the package is the same diameter as a spool.
3. They will cut doffing time at the winder in half.
4. They will cut yarn carrier costs to a mere fraction of what they were before, using inexpensive paper tubes in place of expensive and hard to get wooden spools. The paper tube packages fit in the same creel which is used for spools.
5. The greater supply of yarn on the Foster package means long runs and much less creel doffing at the loom.
6. The number of packages to handle is reduced by about 50%.

SALE YARN MILLS — serving the carpet and other industries profit by installing Foster Heavy Duty Winders because their product is thus made more salable, offering important savings as described above.

Tell us your coarse yarn winding problem and let us make recommendations. No obligations.

Facts about MODELS 40 and 77

1. Model 40 handles 30/2 to 8/40 yarns; Model 77 from 8/3 to 8/100.
2. Model 40 package — up to 6½" traverse, Model 77 package — up to 8" traverse.
3. Both machines can be equipped to draw overend or by unrolling from bobbins or from skeins on runner reels.
4. Runner reels for skeins are light in weight, but give long life and are equipped with ball bearings.
5. Ball bearing spindles and drive shaft are standard on Model 77 and optional on Model 40.
6. Spindles driven by individual quarter turn belts, insuring constant spindle speed.
7. Arbors for various types of cones and tubes furnished for both machines.
8. Model 40 can be equipped to wind multiple end braider tubes.



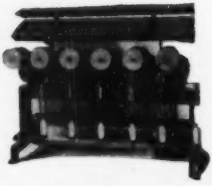
FOSTER MODEL 40

FOSTER MACHINE CO.

WESTFIELD, MASS.

Southern Office, Johnston Bldg., Charlotte, N. C.

Canadian Representative, Ross Whitehead and Company Limited, University Tower Bldg., 1475 Mountain St., Montreal, Que.; *European Representative,* Muschamp Taylor Limited, Ashton-Under-Lyne, England.



FOSTER MODEL 77

How to put the finger on HIDDEN MAINTENANCE COSTS!

. . . ask a Gulf Sales Engineer to check your lubrication practice

What percentage of your machinery maintenance costs can be charged to faulty lubrication? How many replacement parts? How many man-hours? How much down time?

Gulf Sales and Staff Engineers are particularly interested in those hidden maintenance costs which can be substantially reduced by improved lubrication practice.

A Gulf Sales Engineer can put his finger on hidden maintenance costs in your mill just as he has in other progressive textile mills. Write, wire, or phone your nearest Gulf office and ask a Gulf Sales Engineer to call.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation • Gulf Refining Company
PITTSBURGH 30, PA.

 For more information, write direct or use Reader Service post card.

only

ECLIPSE BOBBIN HOLDERS

OFFER THESE

"BIG TEN" Features

1. Completely replaces wooden skewers.
2. Stainless steel ball bearings minimize friction, resulting in uniform quality of roving.
3. Permits less twist. Tests indicate yarn of more even texture.
4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents over-run and backlash.
8. Now cadmium plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

★ ★ ★

Textile men everywhere are concerned with efficiency and economy of operation, and that's just what these *exclusive* Eclipse features assure you! If you want to modernize your present plant equipment profitably, you can't go wrong with the finest—Eclipse Bobbin Holders. Write us for further details.

ECLIPSE MACHINE DIVISION of Bendix AVIATION CORPORATION

ELMIRA, NEW YORK

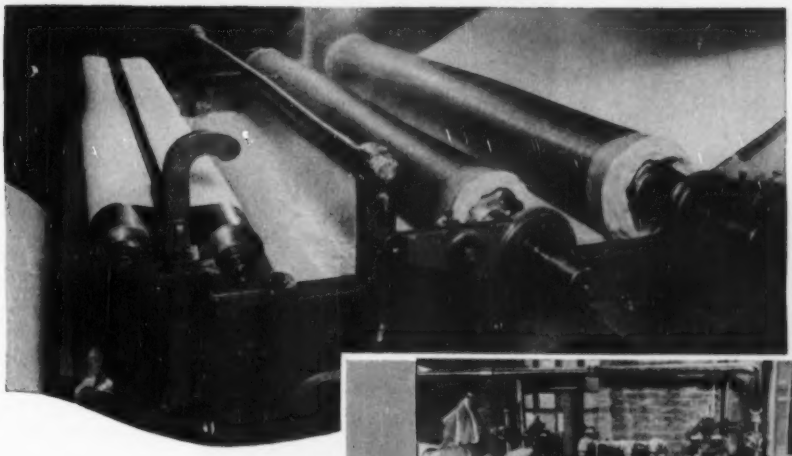
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

ECLIPSE

Stainless Steel roll jackets on these slashers

save $163.47 per year

in maintenance costs



◀ Use of Stainless Steel jackets on the two cloth-covered rolls at the left has reduced maintenance costs and eliminated rust contamination. The jackets were made by West Point Foundry, West Point, Ga. Size boxes on Monroe Cotton Mills' three slashers are also Stainless and have been in service five years.

▼ These three kettles in the size mixing room at Monroe Mills are also Stainless Steel. They have been in service seven years, and have eliminated the continuous repair necessary when tanks were of other materials.

IN July, 1949, Monroe Cotton Mills, Monroe, Ga., began using Stainless Steel jackets on the sizing and finishing rolls of three slashers. In the next 12 months, these Stainless jackets accounted for a saving in maintenance costs of $163.47, or $54.49 per slasher.

Cast iron rolls were used previously and required cleaning at six-month intervals. The company estimates labor costs for the twice-yearly cleaning of the three slashers at $110.40, to say nothing of lost production during the eight-hour shutdown at each cleaning.

The remaining saving of $53.07 is in slasher cloth. The Stainless jacket rolls produced more than 1,000 yards of additional fabric per yard of slasher cloth, due to elimination of rust.

These maintenance savings alone paid the entire cost of the Stainless roll jackets in less than two years. And they still had years of service life left. In addition, "appreciable" savings were realized from elimination of rust-contaminated yarn before each semi-annual cleaning.

For minimum maintenance, long service life and freedom from product contamination, take advantage of the corrosion resistance of Stainless Steel. Its tough, dense, smooth surface is kind to fabrics wherever you use it in the mill. And for finest performance, be sure your equipment fabricator uses U·S·S Stainless Steel.

UNITED STATES STEEL COMPANY, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH · TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S STAINLESS STEEL

USS

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

2-1057

UNITED STATES STEEL

WHAT *Life-Lines* REALLY DELIVER IS MORE SERVICE...LESS SERVICING

For more information, write direct or use Reader Service post card.

How to spot a truly pre-lubricated motor

You are looking at the first motor made to utilize pre-lubrication to its *utmost.* Notice the bearing hub. It was *designed* for a pre-lubricated bearing. There are *no* grease fittings or plugs. The way to grease this modern motor is *don't.*

Westinghouse—the pioneer in pre-lubricated motors—announced in 1948, after 15 years of tests in the laboratory and on the job throughout industry, that Life-Line motors needed no further lubrication. That meant what it said; still means it. You don't have to lubricate them in six months or six years. You don't have to lubricate them—period!

This means you can't grease a Life-Line motor incorrectly. No chance to push dirt into bearings . . . to force grease through seals and into windings. No chance for greasing errors at all! Lubrication problems are out.

So be sure you get a truly pre-lubricated motor. Look for one that has no grease fittings. You'll know then it means what it says and needs no greasing attention. You'll find your answer in Life-Lines. Remember this is but one reason why Life-Lines offer you more service on the job . . . less servicing.

Ask your Westinghouse representative about other reasons—all steel construction and greater electrical strength. And ask for a free copy of "Facts on Pre-Lubricated Bearings" (B-4378), or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21705-A

YOU CAN BE SURE... IF IT'S Westinghouse

(Advertisement)

WESTON TAG

Thermometers

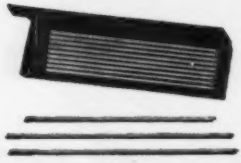
in all forms—ranges—stem lengths—connections

Whether your requirement calls for certified laboratory thermometers . . . or rugged all-metal industrial types . . . or thermometers for remote reading . . . you'll find *exactly* what you require in the Weston-TAG line—*the most comprehensive line of quality thermometers ever offered by ONE manufacturer.* Literature on request. WESTON Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, New Jersey.

Laboratory

ALL-METAL

—have readable, dial-type scales and corrosion-resisting stainless steel stems—stem lengths from 2" to 24"—ranges from low as −100°F. to high as 1000°F.—accuracy ½ of 1% of thermometer range.



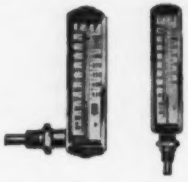
GLASS

—certified sets of ASTM Testing thermometers with overlapping ranges in protective case. Ranges from −36°F. to high as 760°F. Also precision and standard etched stem thermometers for general testing.

Industrial

ALL-METAL

—provide unmatched readability and durability—accuracy within 1% of thermometer range. Available in all types, ranges and stem lengths (2½" to 72") for all requirements.



GLASS (Metal Case)

—available in all forms, all ranges, stem lengths and connections. Accuracy within one scale division. Also submarine types, metal and cupcase thermometers.

Remote Reading

ELECTRICAL

—resistor bulb sensing element permits mounting indicator any distance away from point of measurement. *Multiple* remote readings also possible by use of selector switch and several bulbs.

PRESSURE ACTUATED

—for remote reading, in 5, 6 and 8" dial sizes. Ranges from low as −325°F. to high as 1000°F. Accuracy one scale division unaffected by vibration or severe shock. Cases of iron, brass, or plastic.

WESTON *Temperature Instruments*

— TO INDICATE — RECORD — CONTROL

9413

"TAG" Automatic Controllers Record Temperature, Pressure

Pressure, vacuum or temperature can be automatically regulated and recorded with the Pneumatic Recorder-Controllers produced by TAGliabue Instruments Div., Dept. 67, Weston Electrical Instrument Corp., Newark 5, N. J. These devices maintain conditions for which they are set by varying control line air pressure, which operates a diaphragm valve to regulate flow of fluid (gas, steam, liquid) to the equipment being controlled. At the same time, the instrument continuously records actual temperature or pressure on a circular chart.

Operating on an air supply of 18 p.s.i., TAG Recorder-Controllers handle temperatures between −100°F. and 1000°F., vacuum as great as 30" mercury, or pressures up to 7500 p.s.i.

"TAG" Temperature Recorders Chart from −300° to +1000°F.

Accurate written records of varying temperatures are charted by the Temperature Recorders produced by TAGliabue Instruments Div., Dept. 67, Weston Electrical Instrument Corp., Newark 5, N. J. Temperatures as low as −300°F. or as high as +1000°F. can be recorded with these versatile instruments.

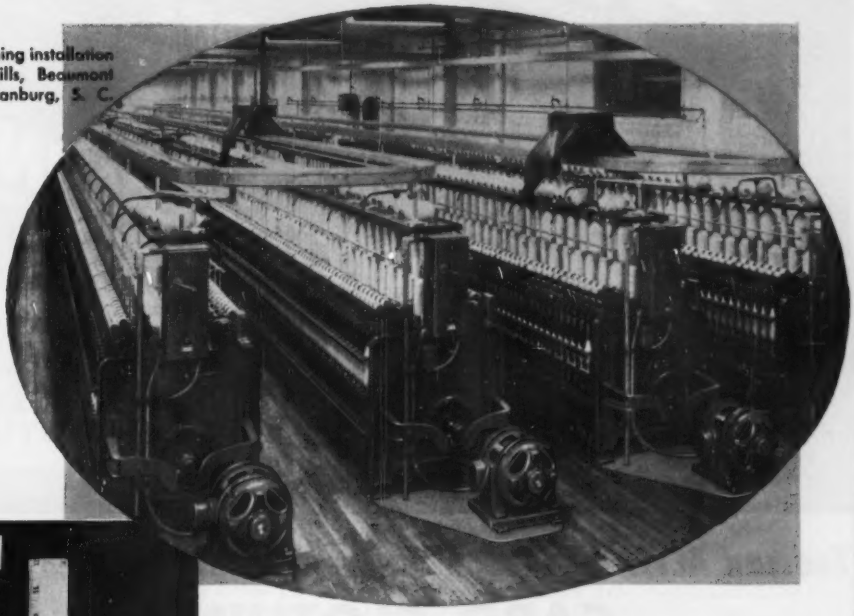
Various types of actuations in TAG Temperature Recorders achieve scale expansion for utmost precision over the working ranges. Interchangeable tube systems are laboratory calibrated at the factory. A safety link provides over-range protection. Details are given in Catalog 1210.

"TAG" Pneumatic Controllers Govern Temperature, Pressure

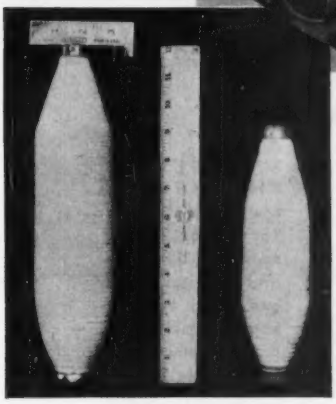
Pressure, vacuum or temperature can be accurately regulated by the Pneumatic Controllers engineered by TAGliabue Instruments Div., Dept. 67, Weston Electrical Instrument Corp., Newark 5, N. J. These trustworthy devices maintain the conditions for which they are set by varying air pressure in a control line, which in turn operates a diaphragm valve to increase or decrease the flow of fluid (air, gas, steam, liquid) to the equipment being controlled.

Operating on an air supply of 18 p.s.i. pressure, TAG controllers handle temperatures between −100°F. and 1000°F., or pressures between 30" vacuum and 7500 p.s.i.

WHITIN keeps pace with the demand for LARGE PACKAGE SPINNING



Model F3 Spinning installation at Spartan Mills, Beaumont Division, Spartanburg, S. C.



Unretouched photo of a large package spun on the "F3" and conventional size bobbin. The 11" package contains 7.50's and the net weight of yarn exceeds 16 oz.

Whitin's new "F3" Spinning Frame successfully meets all the demands of the Industry for large package spinning on coarse counts. These frames are designed for 11" traverse with filling wind, the package containing 16 oz. or more net weight of yarn, depending on the count.

An ever-increasing number of mills have discovered that substantial economies can be effected by the use of large package spinning, particularly in running coarse numbers. Savings are definitely assured because large packages increase the length of the doffing cycle, reduce package handling in winding, — result in lower labor and winding costs.

Cost-conscious mills are finding a number of other interesting features on the Model F3 including (1) it requires no plant modifications to replace old frames. (2) it is a conventional type frame; your employees are already acquainted with its operation and understand its maintenance. Last, but not least, (3) it is comparable in initial cost to standard spinning frames.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

You can ALWAYS depend on these numbers when you need

CARD CLOTHING

4 FACTORIES (Fall River, Worcester, Philadelphia, Greenville) which assure you of an uninterrupted supply of card clothing. Decentralized and strategically located, these factories can "pinch hit" for each other in emergencies.

6 REPAIR SHOPS (Fall River, Philadelphia, Charlotte, Greenville, Atlanta, Dallas [Textile Supply Co.]), which assure convenient, economical and prompt reclothing and repair service.

7 DISTRIBUTING POINTS (Fall River, Worcester, Philadelphia, Charlotte, Greenville, Atlanta, Dallas [Textile Supply Co.]), which make Ashworth products and consultation service more readily available.

AND DON'T FORGET "90". More than 90 years of experience in cards and card clothing — your guide to a consistently high standard of quality in manufacture and efficiency in performance.

Buy Ashworth Card Clothing and get DEPENDABILITY.

PRODUCTS AND SERVICES

. . . Card Clothing for cotton, wool, worsted, silk, rayon and asbestos cards and for all types of napping machinery. Brusher clothing and card clothing for special purposes. Lickerin wire and garnet wire. Sole distributors for Platt's metallic wire. Lickerins and top flats reclothed.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO. (Woolen Division)
Fall River • Worcester • Philadelphia • Charlotte • Greenville
Atlanta • Dallas (Textile Supply Co.)

Ashworth **CARD CLOTHING**

NEWS *from Ciba Research*

ATTENTION: ALL DYERS OF
WOOL ✓ NYLON ✓
SILK ✓ BLENDS ✓
seeking exceptional
fastness properties.

SUBJECT

CIBALAN*

DYESTUFFS

We believe all wool dyers have been searching for, and will welcome, a range of colors which produce by a simple dyeing procedure, shades of outstanding fastness to light and wet processing. Such a range we are proud to present in the Cibalan Colors.

1. These new and original Ciba products are represented by an assortment of twelve "metal complex" dyestuffs that are applied in a neutral or weakly acid dye bath.

2. Cibalan Dyestuffs produce outstanding light fastness on wool even in pastel depths. When used for dyeing unions of wool and cotton, or wool and rayon, this means the light fastness on the animal fiber can now be brought to the level of the best Chlorantine Fast Colors on cellulosic fibers.

3. They are fast to washing, perspiration, fulling, carbonizing and decatizing. Tippy wool is dyed uniformly.

These new and versatile dyestuffs are recommended for loose wool, tops, yarn and piece goods. In addition, they produce fast dyeings on nylon and silk.

The following original types represent the beginning of this interesting series...

CIBALAN YELLOW GRL	CIBALAN KHAKI GL
CIBALAN YELLOW 2BRL	CIBALAN SCARLET GL
CIBALAN ORANGE RL	CIBALAN BORDEAUX 3BL
CIBALAN BROWN 2GL	CIBALAN BLUE BL
CIBALAN BROWN BL	CIBALAN GREY BL
CIBALAN BROWN TL	CIBALAN GREY 2GL

*Reg. U.S. Pat. Off.

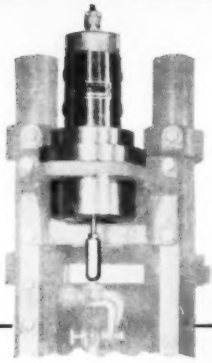
FURTHER INFORMATION

CIBA COMPANY INC.
627 Greenwich Street,
New York 14, N.Y.
Boston Chicago Charlotte
Providence San Francisco Philadelphia

CIBA

Scott's NEW "ACCR-O-METER"

WEIGHING SYSTEM FOR CONSTANT-RATE-OF-EXTENSION TESTING



For converting existing Scott Testers to Constant-Rate-of-Extension

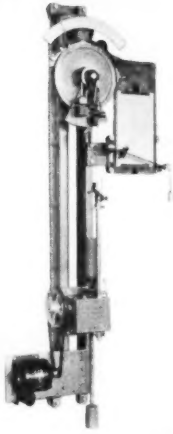
TESTS BOTH HIGH- AND LOW-ELONGATION MATERIALS

Our most recent development for tensile testing incorporates an electric weighing system free from inertia, accurate beyond belief. Available as a kit for conversion of existing Constant-Rate-of-Traverse Scott Testers to Constant-Rate-of-Extension. Gives wide versatility enabling a single instrument to test various types of materials, or make various tests on the same material. Tests are permanently recorded on a visual record. Capacities up to 2,000 lbs.

LITERATURE UPON REQUEST

The ACCR-O-METER is at present applicable to convert these types of Scott Testers* which are standard equipment in Textile Mills the world around:

MODEL J **MODEL X-3**



SCOTT TESTERS INC.

95 BLACKSTONE ST. · PROVIDENCE, R. I.

**Registered Trademark*

Scott Testers — Standard of the World

Increase finishing department output 50 to 100% with the

new

PROCTOR TENTER HOUSING

As a replacement for out-of-date equipment this new Proctor tenter housing, will, in many cases, increase finishing department output 50 to 100%. Often, this is enough to pay for the installation in 2 years.

Its completely redesigned heating and fan system provides:

1. Greatest drying capacity ever offered in a tenter housing—per foot of length
2. Maximum air movement
3. Adjustable air circulation to suit individual conditions.

With all of these advantages—plus many more—this vastly improved streamlined tenter housing is offered to you at NEW LOW COST!

In short, this is a proposition you can't afford to overlook. Use coupon for more information!

PROCTOR & SCHWARTZ • INC •
710 TABOR ROAD • PHILADELPHIA 20 • PA •

Please let us have information on
the NEW PROCTOR TENTER HOUSING

Name _____

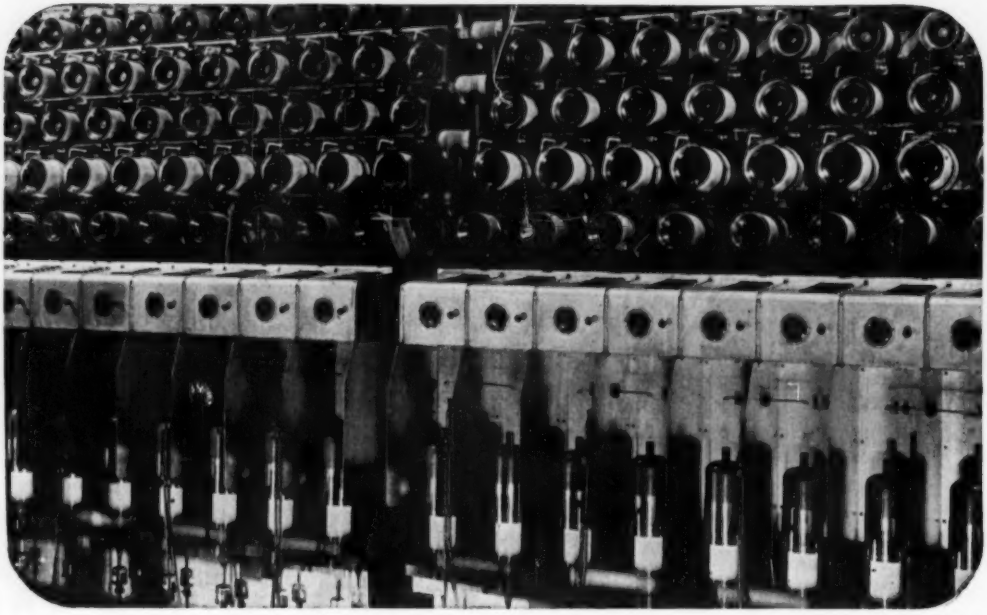
Company _____

Address _____

City _____ State _____ 710

"ELC"

Pays off in production of synthetics



When you buy essential new equipment for the production of synthetics, you'll want to consider the many advantages of Armco "ELC" Stainless Steels.

These special stainless steels are just as corrosion resistant adjacent to the welds as elsewhere. The reason is the Extra Low Carbon content (.03% maximum) of Armco Types 304L and 316L.

Ideal for synthetics

Extra Low Carbon eliminates costly corrosion alongside weld areas when it is due to the heat effects of welding. This is especially important if your equipment is used in producing certain synthetics where the chemicals used may affect weld areas in standard stainless steels.

Another important advantage is that Armco ELC grades *cost less* than corresponding types stabilized by the addition of columbium or titanium.

Wide range of uses

Armco ELC grades can cut operating costs and prolong service life in agers, bleaching and fulling machines; in carbonizing equipment and dye kettles; and in all kinds of equipment for the production of synthetics. They are not recommended when service temperatures are above 800 F.

Find out how *you* can take advantage of the special properties of Armco ELC. Just write us, or ask your equipment fabricator to inquire.

ARMCO STEEL CORPORATION

3732 Curtis Street, Middletown, Ohio • Plants and sales offices from coast to coast • Export: The Armco International Corporation

ARMCO

Typical water-spotting on taffeta (above). Same grade of taffeta sized with Stymer LF (right).

HOW TO KEEP OFF THE SPOT

By sizing dope-dyed yarns—for the new loom-finished fabrics—with STYMER LF

Along with dope-dyed yarns came many real advantages, but also one "bug" that everyone knew had to be licked—water-spotting.

Certainly, the sizes you used on white acetate, when applied to dope-dyed yarns, did an excellent job in many respects . . . and made it possible to weave beautiful taffetas. But there was one serious problem with these sizes—they contributed to water-spotting of finished garments. Stymer LF *does not* contribute to water-spotting.

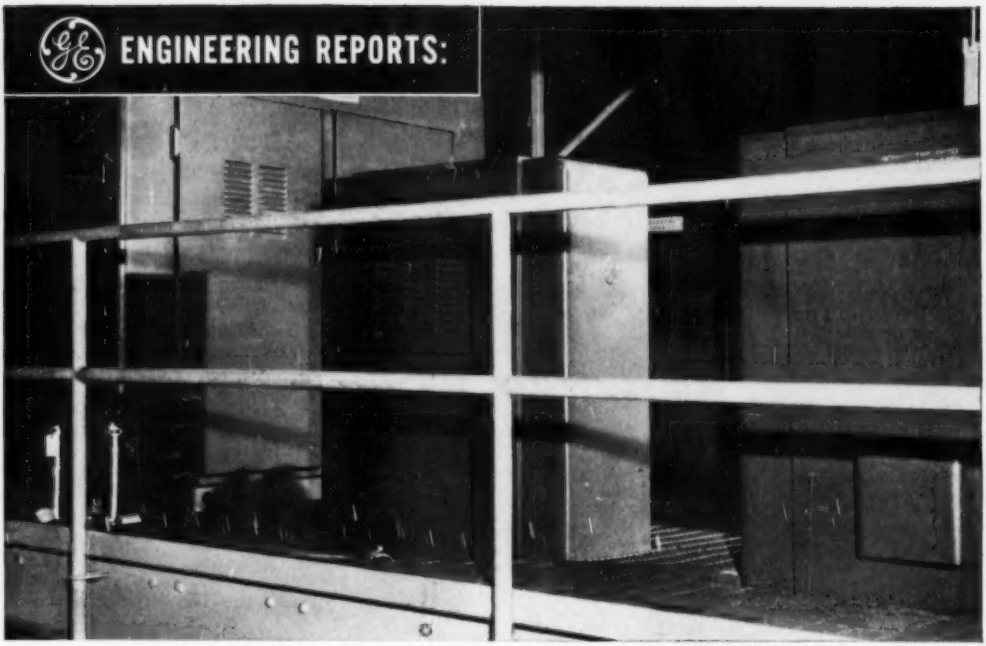
This is why Stymer LF is worth a good long look. For Stymer LF is an odorless, durable size—one that performs well all the way from slasher to loom—and also produces a good-looking, *non-spotting* finished fabric with a marketable hand.

If you weave dope-dyed filament acetate, Stymer LF may be just what you've been hoping for. Write for the full story today. MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass. Stymer: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS—PLASTICS

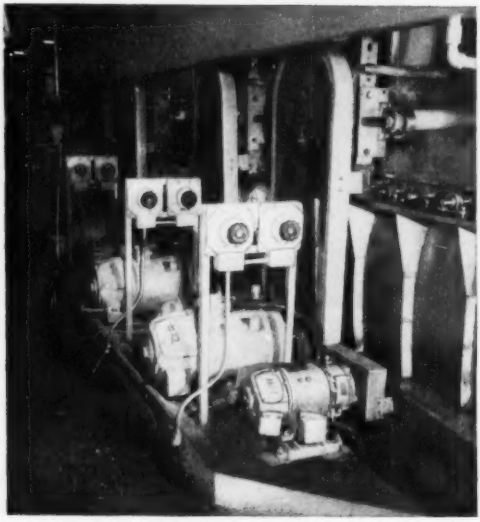
SERVING INDUSTRY . . . WHICH SERVES MANKIND

ENGINEERING REPORTS:

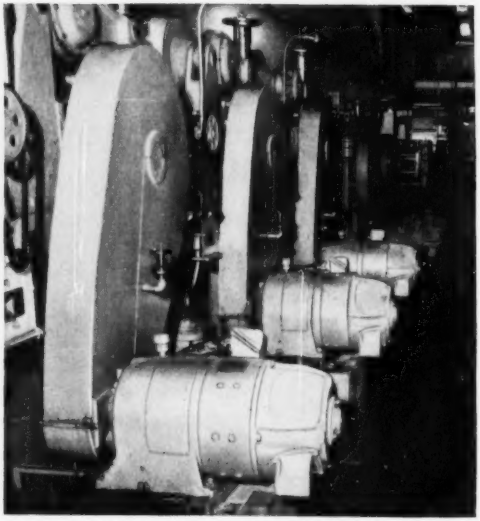


EASY-TO-INSTALL G-E Speed Variator power package can be located practically anywhere. At Delta Finishing Co., some are placed on a grid-floored balcony. Costly interwiring was eliminated—running in conduits was all that was needed.

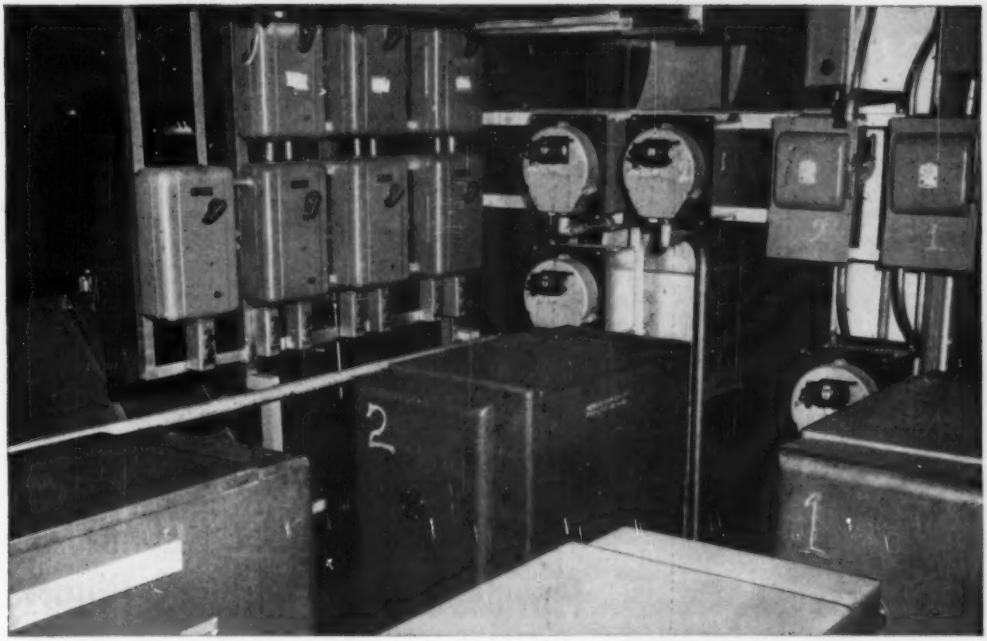
New G-E packaged range drives



PRECISE SPEED ADJUSTMENT is provided in this scouring washer by individual G-E motor field rheostats.



CAREFUL CO-ORDINATION of four 10-hp G-E splashproof gear-motors keeps four-compartment washer in step.



COMPACT G-E Speed Variator power "packages" save floor space. The four units shown here contain all equipment necessary for powering several ranges at Delta Finishing. Note how compact design of units allows grouping in limited area.

make plant layout more flexible

P.S. FOR MANAGEMENT: G.E.'s new "Progressive Mechanization" Program can help you develop and execute planned mechanization. For free manual GEA-5789, or showing of color film, contact your nearest G-E Apparatus Sales Representative.

Compact Packaged Power units at Delta Finishing Co. save space, cut installation costs

At the Delta Finishing Co. plant in Wallace, S. C. (division of J. P. Stevens & Co., Inc.) the wide variety of range layouts needed makes General Electric packaged drives especially valuable.

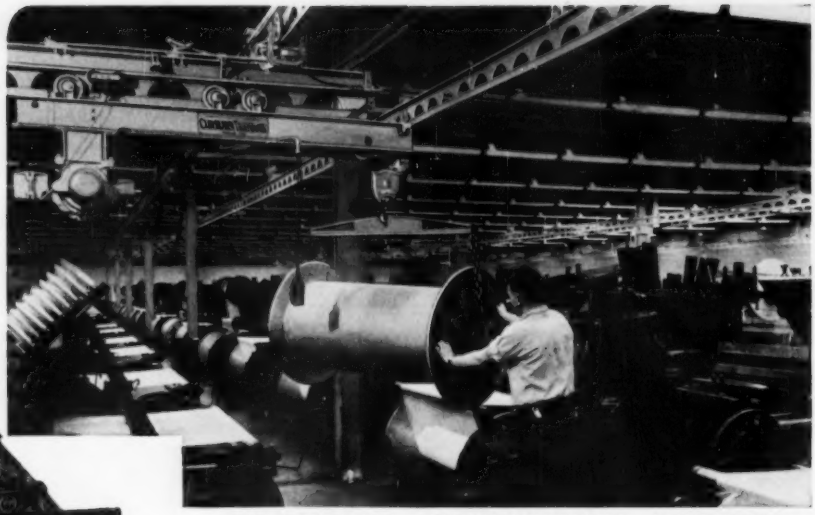
A de-sizer, a ten-beam boil-off, a scouring washer, a loop dryer, and a mercerizer washer, among others, are accurately co-ordinated by these adaptable multi-motor systems. Each drive frees important floor space—power units combine motor-generator set, exciter and control panel in single, compact "packages." No special foundation is needed. Units can be located anywhere.

Costs are lowered, too. Power units are mass-produced from standardized parts. Installation or relocation is simple—just set up the power "package," run in the conduit. Range layouts can be changed easily and quickly.

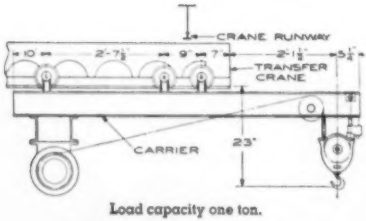
To learn more about range drives that give all the advantages of d-c speed control, ***plus*** the advantages of drive "packaging," call in your G-E textile-mill representative. General Electric Co., Schenectady, N.Y. 654-24

Engineered Electrical Systems for Textile Mills

GENERAL ELECTRIC



Despite the columns in this aisleway, beams weighing up to 1500 lbs. are easily doffed from the creels of the looms on either side of the aisle with the cantilever carrier on the Cleveland Tramrail transfer crane. The carrier can be transferred to any of a large number of bridges serving the entire weave room.



Load capacity one ton.

TRAMRAIL CANTILEVER CARRIER Provides Handling Around Pillars

A problem in loom beam handling in the weave room of the Gerrish-Milliken Mill in Pendleton, S. C. was solved by the use of a specially designed carrier with a cantilever arrangement that permits the unit to handle loads beyond the end of the crane on which the carrier operates.

The room was originally planned to accommodate a number of rows of looms with one alley serving every two rows. However, the roof-supporting pillars were so located that it was impossible to handle the heavy beams from the looms located along one side of some of the alleys with a standard crane. Such a crane, long enough to permit a hoist carrier being spotted over the loom creels, would not clear by the columns.

The Cleveland Tramrail crane designed for this application was made short enough to pass the columns. The carrier, with its extension feature, permits the hoist to reach out as much as 2'-1½" beyond the end of the crane. When it is necessary to travel the crane for some distance on its runway, the carrier is moved in sufficiently from the crane end to permit safe clearance of the columns.

This special unit gave the mill more freedom in working out the loom layout without regard for the location of the columns. It is one example of the many ingenious designs developed by Cleveland Tramrail for providing efficient overhead materials handling.

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THE CLEVELAND CRANE & ENGINEERING CO.
8479 EAST 287TH ST., WICKLIFFE, OHIO.

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

For more information, write direct or use Reader Service post card.

Q: WHERE *do you think,*

the Automatic Loom Bobbin was

INVENTED, PATENTED *and* **DEVELOPED?**

Yes, you're right... it was at US

All of the "Old Timers" in the mills will of course remember that U S originated and patented the Automatic Loom Bobbin... but many of the younger generation may never have been told this important fact.

And it is an important fact, for **where but in the place of origin** would you find the enthusiastic pioneering spirit which not only creates a revolutionary idea, **but is constantly alert to develop it to the highest point of perfection and use?**

WHERE DO YOU LOOK FOR *QUALITY CONTROL?*

Where . . but at U S — can you find ownership of such extensive acreage of forest lands, the source of the desirable Adirondack Rock Maple? . . . And with complete control of the stock from the time the logger goes into the woods until the bobbins leave the shipping platform!

Where . . but at U S — can you find a battery of 25 dry kilns of the most modern design and efficiency, used only for small bobbin, shuttle, spool and beam stock?

Where . . but at U S — can you find such ingenious automatic woodworking machinery? It was designed and built by our own engineers!

Where . . but at U S — can you find a complete metal fittings shop, where all rings, bushings, shields and stampings are formed . . . on U S-made dies?

Where . . but at U S — can you find a modern enameling and finishing department where bobbins can be finished right in the plant and not be subjected to the possibility of picking up moisture if transported to another plant for that operation?

Where . . but at U S — can you find a fully equipped plating department? No holding up delivery by sending the work out; complete control of quality in plating.

Where . . but at U S — can you find **so many inspection points?** With practically every operation performed within each of the four strategically located U S plants, it is obvious that **U S is never subjected to outside interpretations of quality!**

Where . . but at U S — can you find such capable, conscientious sales service as is rendered by the U S sales force? With U S, you are always dealing directly with the manufacturer.

Where . . but at U S — can you find such prompt delivery, excellent service and all-'round satisfaction with every order placed?

U S BOBBIN & SHUTTLE CO.

U S makes Bobbins, Spools, Cones and Rolls; Shuttles for all automatic and shuttle-changing looms; Warper Beam Heads and Warper Beams for Cotton, Rayon and Nylon.

LAWRENCE, MASS. • GREENVILLE, S. C. • PHILADELPHIA, PA. • PROVIDENCE, R. I.
JOHNSON CITY, TENN. • CHARLOTTE, N. C. • MINNEAPOLIS, MINN.

LOS ANGELES: E. G. Paules, 1762 W. Vernon Ave. DALLAS: O. T. Daniel, Textile Supply Co. CANADA: W. J. Westaway, Montreal, Que., Hamilton, Ont.

THE SEAL OF QUALITY AND SERVICE
US
SINCE 1857

NEW Spinning Frame Drive

CUTS DOWN-TIME ON SPEED CHANGES!

INCREASES PRODUCTION!

The variable sheave in this new drive locks as a unit when tightened on the shaft. It locks and unlocks easily, quickly, with the turn of a screw.

One-point adjustment establishes accurate pitch diameter; cylinder speeds are held within extremely close limits. Changes are made quickly, production is kept at maximum. In rare cases where a change in the companion sheave is required, the famous Dodge Taper-Lock principle makes the change quick and easy.

The slide motor base permits quick changes in center distances to preserve proper belt tension as the variable sheave is adjusted for changes in speed.

Latest design Sealed-Life Belts have deep sidewalls and lateral rigidity for efficient operation.

All components in this new Dodge Spinning Frame Drive are engineered to operate in perfect harmony, assuring a long life of dependable, trouble-free service. Write now for Bulletin A-618 with complete information.

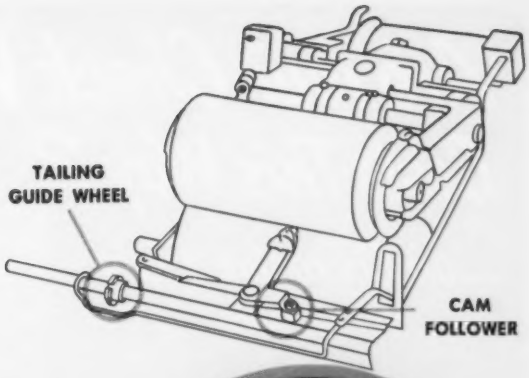
DODGE MANUFACTURING CORPORATION
1400 UNION STREET, MISHAWAKA, INDIANA

DODGE
of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified phone book.

Parts molded of Du Pont NYLON on yarn uptwister

are strong, tough, wear-resistant...need no lubrication



The performance of these parts molded of Du Pont nylon plastic for the Unirail Uptwister is another example of why machinery manufacturers are turning to nylon parts for outstanding performance, low production and maintenance costs.

Du Pont nylon is resistant to both abrasion and impact. It is resilient . . . has low deformation under load . . . withstands continuous operation to 250°F. Nylon can be molded in thin sections and around inserts. And it has excellent bearing characteristics . . . requires little or no lubrication . . . greatly reduces danger of yarn contamination from oil or abraded particles.

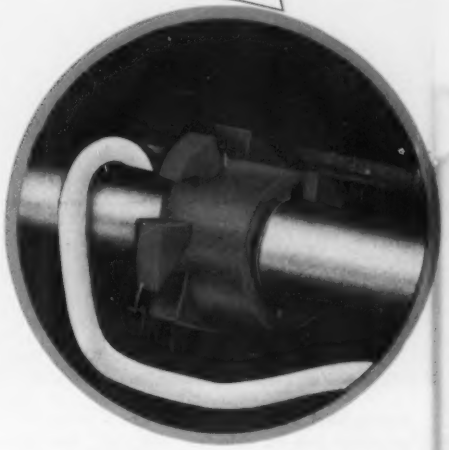
Drafting parts, thread guides, verge plates, condensers and other textile machinery parts molded of Du Pont nylon have also proved efficient and economical in use.

Perhaps you can profit by using parts molded of Du Pont nylon. We'll gladly furnish the names of suppliers who will assist you in developing new parts or improving present ones. For further information, write:

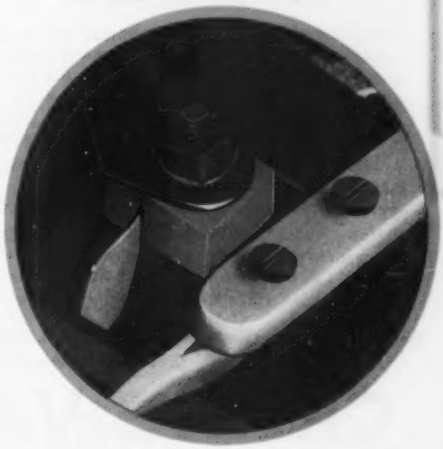
E. I. du Pont de Nemours & Co., (Inc.)
Polychemicals Department; District Offices:
350 Fifth Avenue, New York 1, New York
7 S. Dearborn Street, Chicago 3, Illinois
845 E. 60th Street, Los Angeles 1, California

Parts molded for Universal Winding Co., Providence, R. I., by Standard Plastics Co., Attleboro, Mass.

DU PONT
REG. U.S. PAT. OFF.
150th Anniversary
Better Things for Better Living
... through Chemistry
Polychemicals
DEPARTMENT
PLASTICS • CHEMICALS



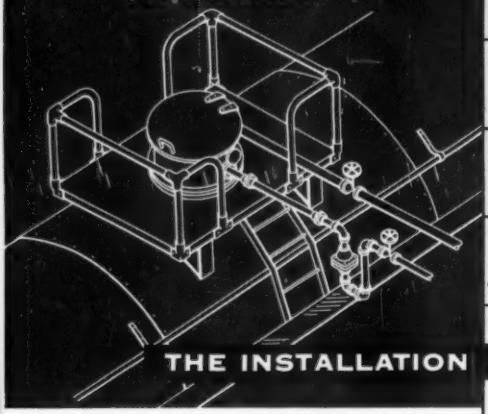
TAILING GUIDE WHEEL is easily installed . . . has high wear resistance. Du Pont nylon is readily molded in this intricate shape. Its smooth surface eliminates snagging.



CAM FOLLOWER is economically molded to close tolerances with Du Pont nylon. Maintenance is minimized since this nylon part needs no lubrication.

Are Your Check Valves Cutting Costs This Way?

...on Corrosive Fluid for instance



THE INSTALLATION

Crane Steel Vertical Ball Lift Check Valve in air pressure line to chlorine tank car, The Mead Corporation, Chillicothe, Ohio.

VALVE SERVICE RATINGS

SUITABILITY:	Doing what's needed
FEATURES:	Non-sticking ball disc
CORROSION-RESISTANCE:	Shows no effects of chlorine
SERVICE LIFE:	Still O.K. after 3 years
MAINTENANCE COST:	Zero - valve never out of service
OPERATING RESULTS:	No loss of chlorine - no unloading delays
AVAILABILITY:	Regular Crane product

THE HISTORY

Unloading chlorine tank cars by pressurizing is common practice. But, formerly, it wasn't safe for this mill. When the compressor was shut down, chlorine would back up into the air system.

Corrosion product would form on the working parts of the check valve in the air line. The disc would stick in open position, letting the chlorine back up. This meant frequent dismantling of the check for servicing. It meant a lot of extra cost in time, labor and unloading delays.

But the trouble was stopped with a Crane Steel Vertical Lift Check. Its polished ball disc of solid Exelloy doesn't stick; always seats tight. For more than 3 years this check has never failed to stop backflow, and still it's good as new.

THE VALVE

Crane No. 3692XS Cast Steel Vertical Ball Lift Check. Compact and sturdy, with heavy metal sections. Has leakproof male and female joint with corrugated soft iron gasket. Ball disc is solid hard Exelloy, highly polished, with guided seating to integral seat ring. Sizes up to 2 inches. Consult your Crane Catalog or Crane Representative for full details.

The Complete Crane Line Meets All Valve Needs. That's Why
More Crane Valves Are Used Than Any Other Make!

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
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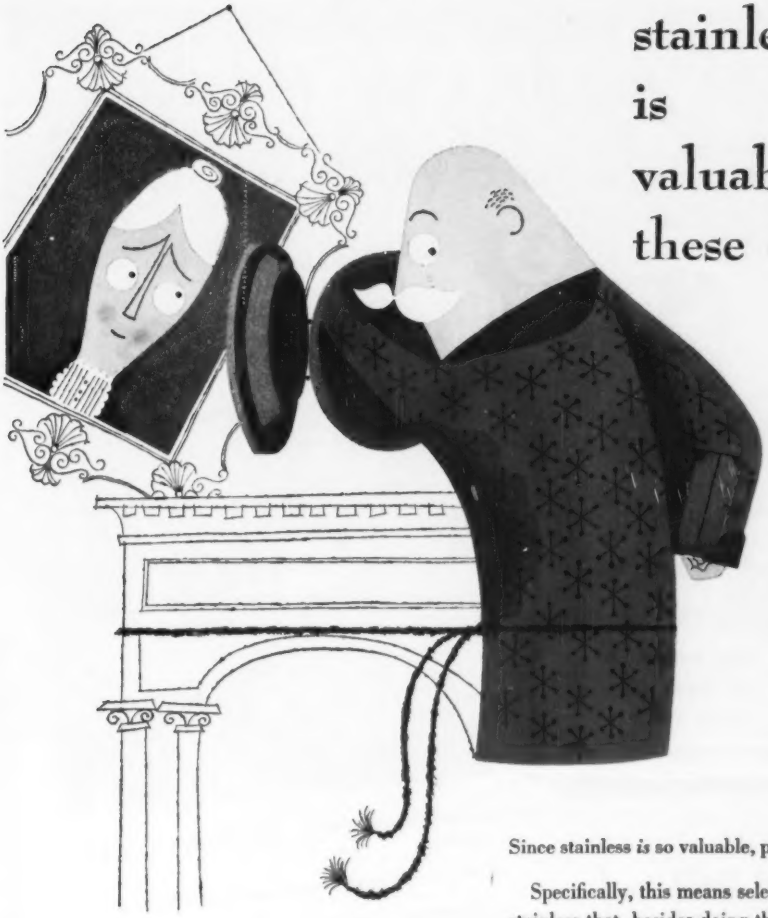
VALVES • FITTINGS • PIPE • PLUMBING • HEATING



stainless is valuable these days

Since stainless *is* so valuable, plan to make it go further.

Specifically, this means selecting a grade or finish of stainless that, besides doing the job adequately, will be in less demand than one you have been figuring on.

Here is where Crucible can help you out. The matchless experience of our metallurgists and stainless fabricating specialists can help you get the most out of your share of stainless.

Call upon us to help you.

CRUCIBLE first name in special purpose steels

52 years of Fine steelmaking

STAINLESS STEEL

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REZISTAL STAINLESS • REX HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS

What do you do when you don't have the right size v-belt in stock?

1 **Contact your supplier for a replacement**

...and wait for delivery
...wait—and watch production stay at zero

2

Send someone to get the required belt

...and pay your employee while he goes for the belt
...pay through loss of production

3 **Stock VEELOS...**

...and always have the *right* size belt when you need it
...any length can be made up from a 100-foot reel
...inventory is automatically maintained
...available from 350 distributors

GET ALL THE FACTS

This Veelos Data Book gives complete details about construction, installation and uses. Write for free copy of this money-saving book today.

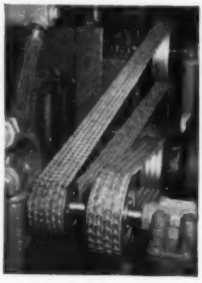
MANHEIM MANUFACTURING & BELTING COMPANY
611 Manbel St., Manheim, Pa.

VEELOS in stock is Production Insurance

Belts for replacement always on hand—just 4 reels of Veelos in the O, A, B and C widths can replace up to 316 different sizes of endless v-belts.

Link construction permits quick installation—without removing outboard bearings.

Adjustability provides controlled tension on each belt—vibrationless, full power delivery is assured.



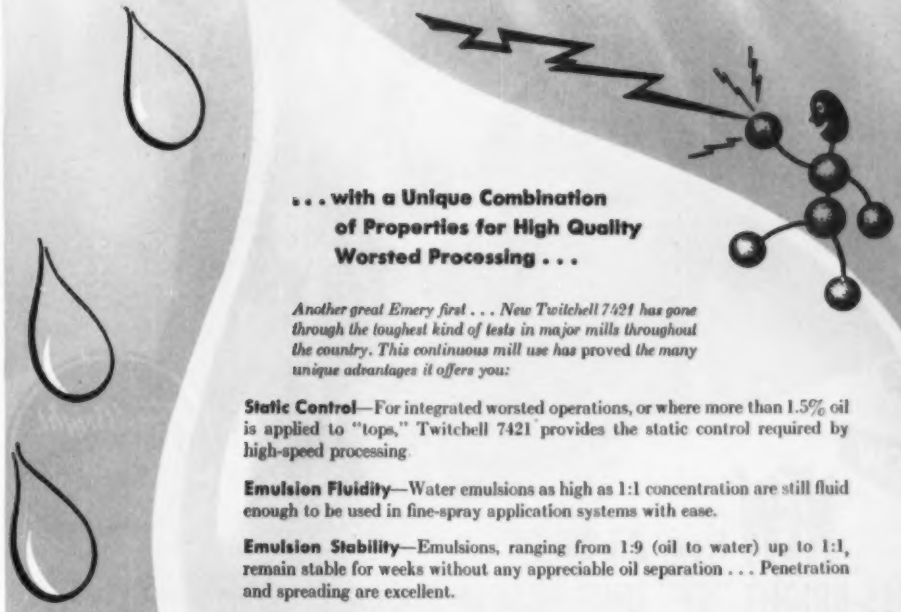
VEELOS
THE LINK
V-BELT

ADJUSTABLE TO ANY LENGTH · ADAPTABLE TO ANY DRIVE

Made in all widths in three types: regular, oil-proof, static conducting. Also double V in O, A and B. Packaged on reels in 100-foot lengths. Sales engineers in principal cities; over 350 distributors throughout the country. VEELOS is known as VEELINK outside the United States.

IF STATIC IS A PROBLEM . . .

Get New Twitchell 7421 Worsted Oil



. . . with a Unique Combination of Properties for High Quality Worsted Processing . . .

Another great Emery first . . . New Twitchell 7421 has gone through the toughest kind of tests in major mills throughout the country. This continuous mill use has proved the many unique advantages it offers you:

Static Control—For integrated worsted operations, or where more than 1.5% oil is applied to "tops," Twitchell 7421 provides the static control required by high-speed processing.

Emulsion Fluidity—Water emulsions as high as 1:1 concentration are still fluid enough to be used in fine-spray application systems with ease.

Emulsion Stability—Emulsions, ranging from 1:9 (oil to water) up to 1:1, remain stable for weeks without any appreciable oil separation . . . Penetration and spreading are excellent.

Resistance to Yellowing and Odor—Repeated tests, both laboratory and plant, show that fabrics treated with Twitchell 7421 do not "heat-up," yellow, or develop odors on aging . . . particularly important for dry-finished fabrics.

Excellent Scourability—An average residual oil content of 0.3% is easily obtained in normal plant scouring, even after prolonged aging. This excellent scourability minimizes soap costs.

Rust Preventive—Emulsions of 7421 are effective inhibitors of corrosion and rust . . . reduce your service problems.

Write for Technical Bulletin ⇩
packed with important and useful information about Emery's new Worsted Oil. Mail coupon now.

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☐ I would like to run a mill trial of new Twitchell 7421 Worsted Oil as soon as possible.

☐ Please send the Technical Bulletin at once.

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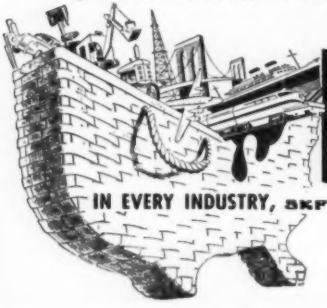
NEW from SKF
the HESS-BRIGHT "SY" UNIT PILLOW BLOCK

A new Unit Pillow Block, designed by SKF to meet tomorrow's needs of modern industry.

Here are the design features:

- SKF Red Seal, made of DuPont Fairprene, retains lubricant. Wiping action of the seal against the inner ring is practically frictionless.
- Rotating flingers exclude dirt.
- Set screws for ease of installation.
- Spherical outer ring compensates for initial misalignment.
- Alemite fitting for re-lubrication.
- Interchangeability with existing installations made possible by bolt hole spacing and center height features.
- Shaft diameters 1 3/16" to 2 15/16".

Detailed illustration of rotating flinger and RED SEAL—the extremely light tension contact seal.



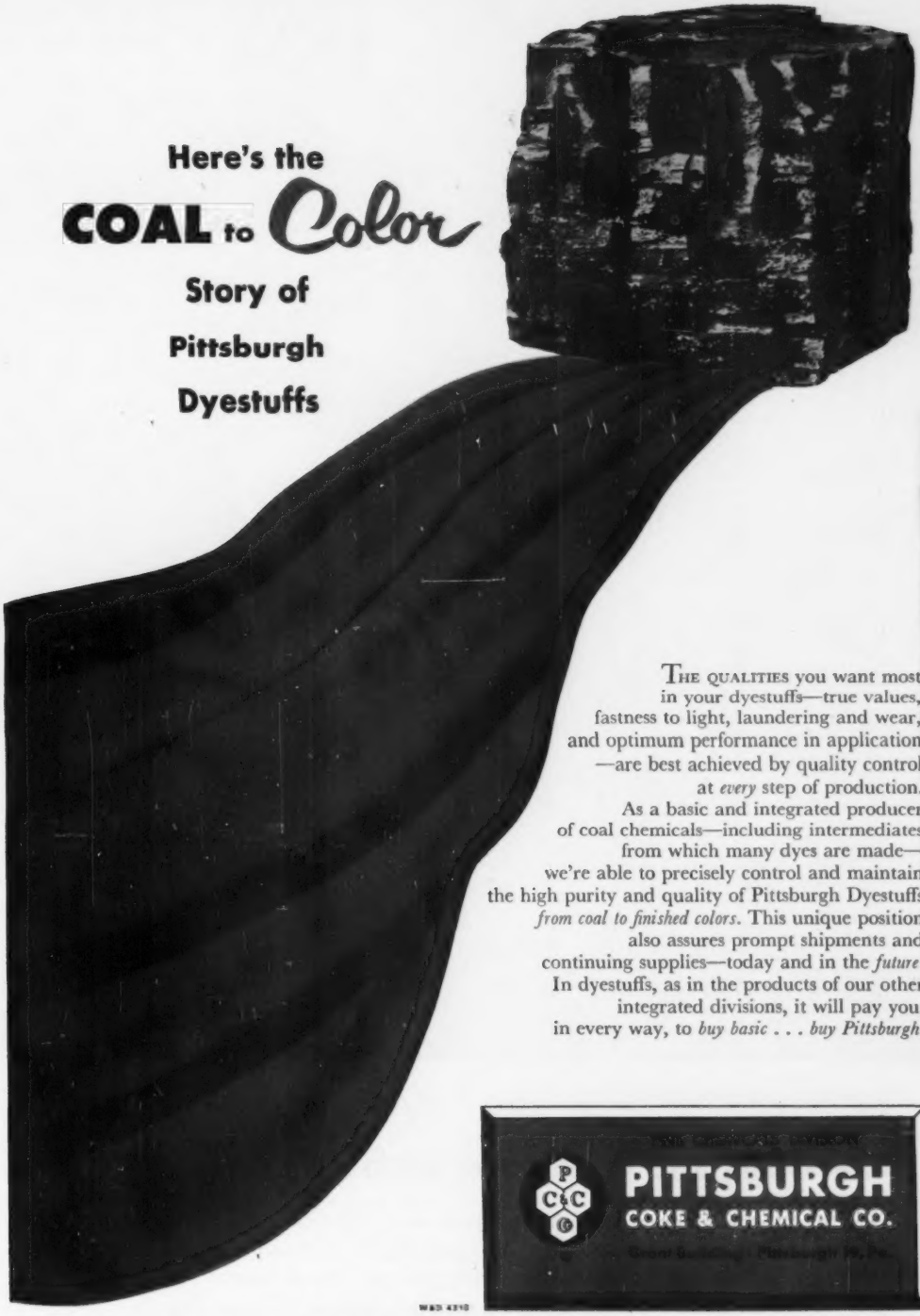
SKF®
BALL AND ROLLER BEARINGS

IN EVERY INDUSTRY, SKF Puts The Right Bearing In The Right Place

From now on, the name to remember in Unit Pillow Blocks is HESS-BRIGHT "SY"—manufactured in our plants, to the same high quality standards as all SKF products. Ask your SKF Distributor to show you the HESS-BRIGHT "SY"; or write SKF direct for complete information on this *newest* Unit Pillow Block.

SKF INDUSTRIES, INC., Phila. 32, Pa.—*manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.* 7353-A

Here's the COAL to Color Story of Pittsburgh Dyestuffs



THE QUALITIES you want most in your dyestuffs—true values, fastness to light, laundering and wear, and optimum performance in application—are best achieved by quality control at *every* step of production.

As a basic and integrated producer of coal chemicals—including intermediates from which many dyes are made—we're able to precisely control and maintain the high purity and quality of Pittsburgh Dyestuffs *from coal to finished colors*. This unique position also assures prompt shipments and continuing supplies—today and in the *future*.

In dyestuffs, as in the products of our other integrated divisions, it will pay you, in every way, to *buy basic . . . buy Pittsburgh*.

PITTSBURGH COKE & CHEMICAL CO.

WBS 4310

COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

She's a great Swimmer — BUT

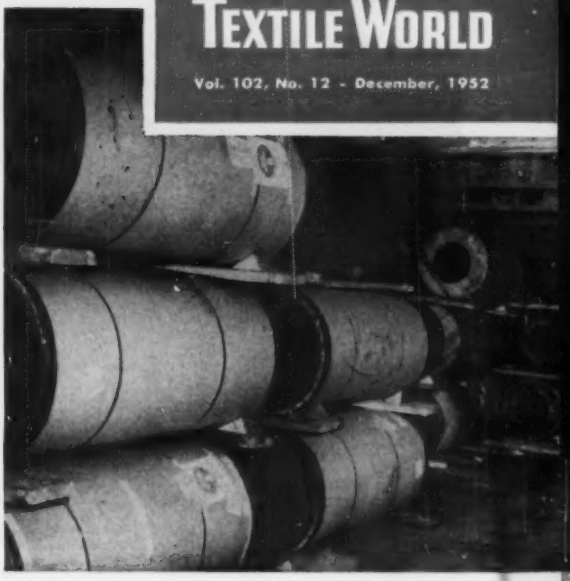
How does she compare with Gertrude Ederle?

Gertrude "Trudy" Ederle, former women's amateur world's record holder of swimming titles from 100 yds. to 880 yds., Olympic Champion, and first woman in the world to swim the English Channel, in the record time of 14½ hours."

In everything we do, we make comparisons . . . In Full-Fashioned Knitting, the one standard of comparison is the 30-section "Reading" Machine with a production of 14 to 16 dozen pairs of superior quality stockings in 8 hours. Simple and flexible in operation. 51-gauge, 60-gauge.

TEXTILE MACHINE WORKS • READING, PENNA.

TEXTILE WORLD
Vol. 102, No. 12 - December, 1952



FULL BEAMS of yarn weighing about 1,200 lb. formerly were upended on wooden runners in the warehouse, but that method of storage required manual trucking and lifting. Now, a lift truck is used to haul the beams and stack them horizontally on wooden pallets.

"No-Strain-in-Our-Jobs" Is Theme of MATERIALS-HANDLING Program

▶ Firestone Textiles, Gastonia, N. C., set out to take the strain out of their handling jobs by installing mechanical materials-handling equipment. Hoists, overhead rails, conveyors, electric trucks and tractors, and an automatic tray elevator have virtually eliminated manual handling of bulk materials.

Pictures on these pages show how Firestone solved several types of handling problems.

LIFTING, LOWERING, DUMPING, AND MOVING—four of the basic types of work involved in all materials handling—are done by mechanical means at Firestone Textiles, Gastonia, N. C.

In a broad modernization program aimed at higher manufacturing efficiency, better working conditions, and jobs with the physical strain taken out of them, Firestone has made such major improvements as air conditioning, new lighting, and mechanical handling wherever handling is done.

"We put through 60- to 70-million lb. of goods a year," Harold Mercer, manager, said. "That's a lot of stuff for people to pick up and push around. Now, they don't have to do it. People just act as the brains; and the trucks, tray elevator, and other handling equipment do the work.

"One of the best things about it is that we don't have people coming up with strained backs, ruptures, and other injuries caused by lifting or moving heavy loads," Mr. Mercer emphasized.

Pictures on these pages show some of the types of handling equipment used at Firestone.

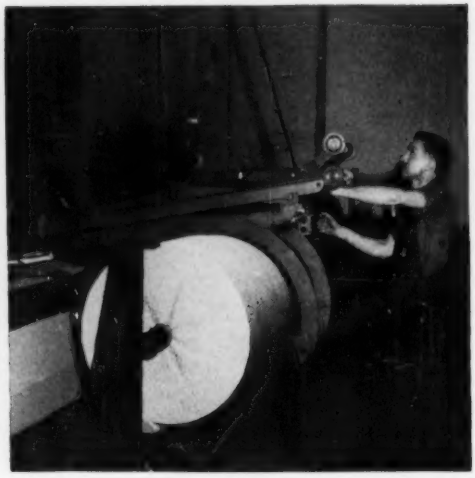
Much of the roving and yarn required by more than 123,000 spinning and twisting spindles is moved in trains of boxes by electric tow tractors. Boxes of roving pushed off the elevator are made up in trains and moved along the big alleys by the tractor to one of three spinning rooms and then to cross alleys adjacent to the frames where the roving will be used.

In the same manner, boxes of yarn assembled in trains are moved by tractors from the spinning frames and to and from spoolers and twisters.

When Firestone Textile handles materials . . .

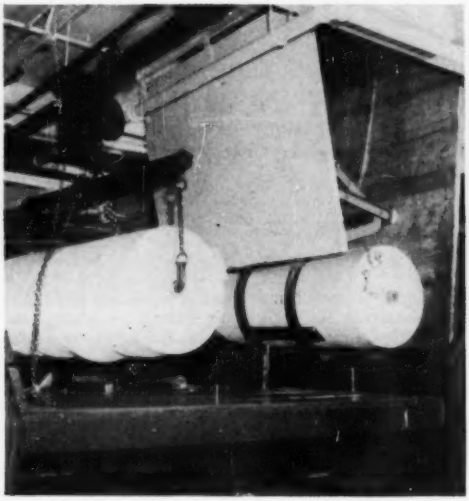
Here's How They Lift

AN ELECTRIC HOIST lifts a box of bobbins at the bobbin-stripping machine. The holding tool of the hoist is a pair of arms (upper left-hand corner) connected with two bottom end corners of a latticed box frame a little larger than the bobbin box. One end of the box frame (the upper end as shown here) is open so that a box of bobbins can be pushed into the box frame. The top of the frame has four solid sections that can be opened to permit the bobbins in the bobbin box to pour out onto the apron of the bobbin-stripping machine.

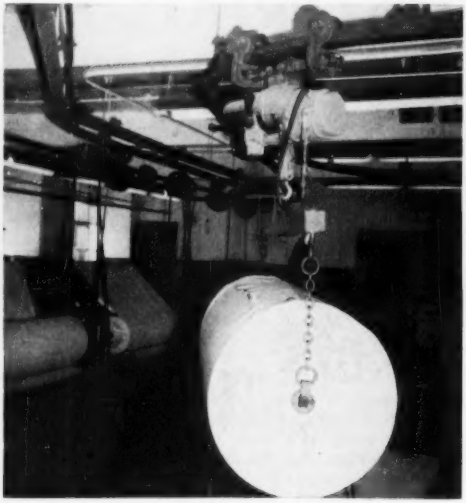


A ROLL OF CLOTH is lifted off the loom by a hoist equipped with a clutching type of holding tool. As seen here, the curved arms of the holder are being placed over the roll of cloth. When the operator throws the switch to cause the hoist cable and hook to lift, the upper folded arms of the holder will unfold in a double jackknife action that will cause the curved arms to close on the roll of cloth. As the cable continues to raise, the cloth will be lifted clear of the loom frame and may then be transported along an overhead track.

Here's How They Lower

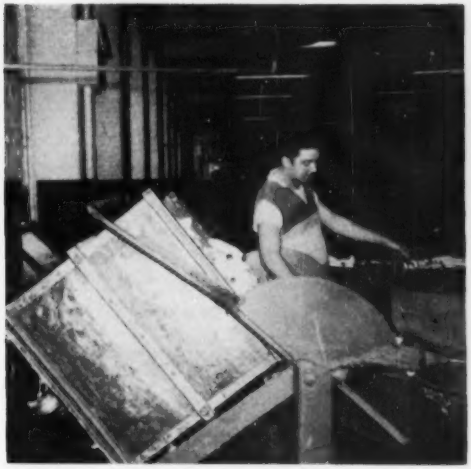


ROLLS OF RAYON TIRE-CORD FABRIC weighing 900 to 1,200 lb. are lowered from the weave room on the floor above to a table on this floor through a trap door in the weave-room floor. This arrangement replaced the old method of manually mounting a roll of cloth on a dolly and bringing it downstairs on an elevator.

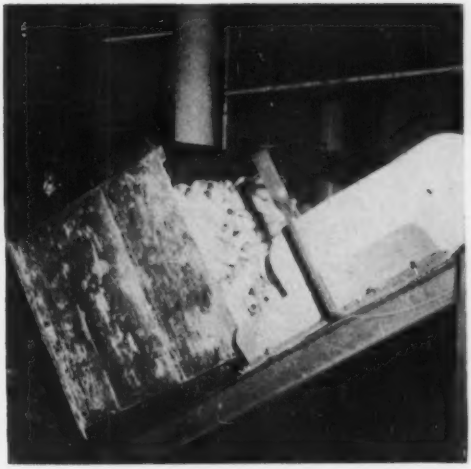


THIS ROLL of rayon tire-cord fabric will be lowered into place on one of the baling tables. A spur of the overhead track extends over all the baling tables so that no manual lifting, moving, and lowering are required. For this type of handling, the holding tool consists of a wooden beam with a chain and hook at each end.

Here's How They Dump



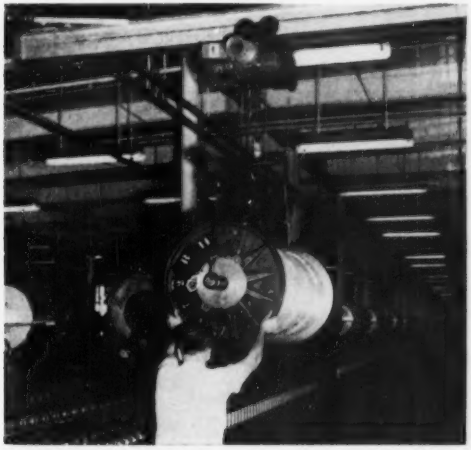
BOXES OF YARN ready for the spoolers are dumped into a Whiting spooler conveyor by a lift dump. The yarn box is held in place by the encircling pipe and lifted by the side frame, which is driven by a motor and turns with a pivot shaft. When the dump is to be loaded, the side frame is down in a vertical position and the pipe is disjointed at the point shown in the circle so that the box of yarn may be pushed into lifting position.



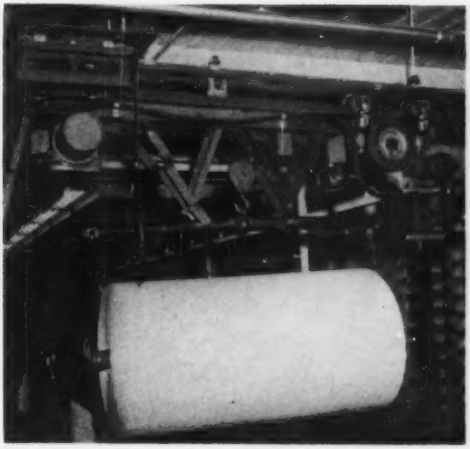
YARN FOR FOUR SPOOLERS not fed by the Whiting conveyor is dumped by this lift. The box of yarn is pushed onto the wooden lift platform, and hoist chains raise the lift in an arc controlled by a pivot shaft. Yarn pours out of the box and slides across an inclined sheet-metal inspection table and into a special spooler-feed truck directly in front of the lift operator. Sheet-metal baffles guide the yarn, and the flat bar keeps the box from tumbling off.

Here's How They Transport

. . . *By Overhead Rail*



A BEAM OF YARN, suspended from a movable crossbeam, is pushed down the big alley to a spooler that is to be creeled.

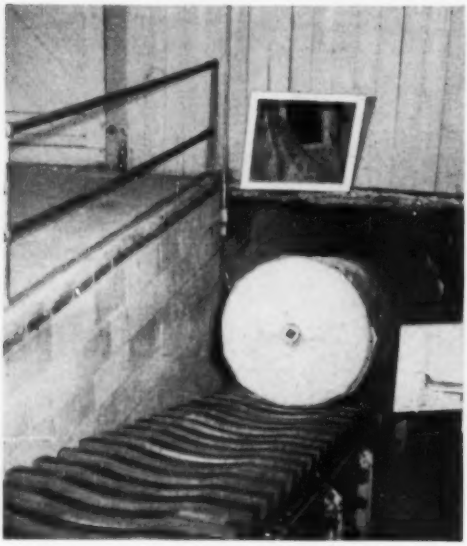


CLOTH FROM THE COTTON LOOMS is pushed along a rail to the baling tables in another room on the same floor level.

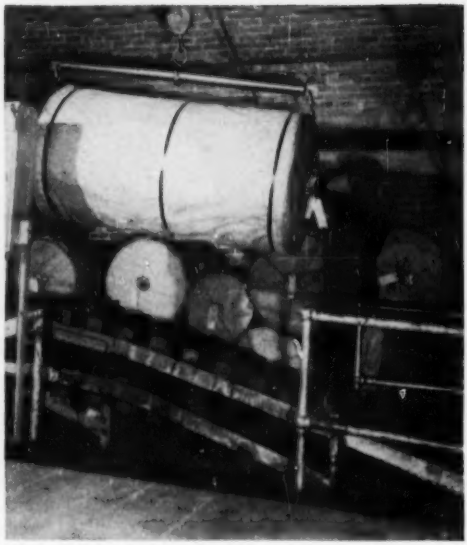
TURN PAGE FOR MORE ON HOW THEY TRANSPORT

When Firestone Textiles handles materials . . .

Here's How They Transport
. . . By Conveyor

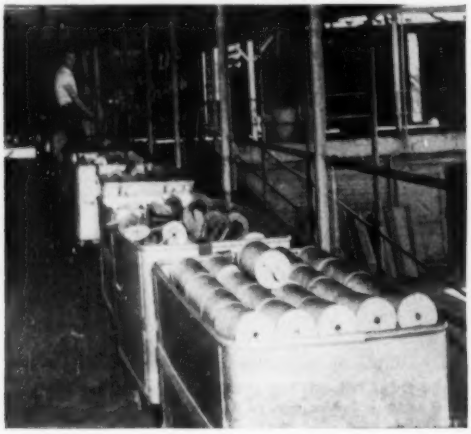


TIRE-CORD FABRIC wrapped and ready for shipment is moved from the baling department to the shipping room on this 225-ft. underground conveyor made of wooden beams mounted crosswise on continuous conveyor chains. At this point, the conveyor emerges from the tunnel and starts the incline toward the weighing section where the rolls are weighed and recorded. In the mirror above the tunnel can be seen a reflection of the mirror at the lower right (back to camera). This setup permits the scalesman to see inside the tunnel.



END OF THE LINE is the weighing section at the left. The roll of cloth, properly tagged, is taken from the conveyor with an electric hoist and stacked against the wall for removal later to the shipping platform or the warehouse. A short distance beyond the weighing section to the left the conveyor turns back in its continuous circuit. As shown here, the wooden slats extend upward on the top chain of the conveyor and downward on the lower chain. The chain is driven by the motor at the lower left-hand corner.

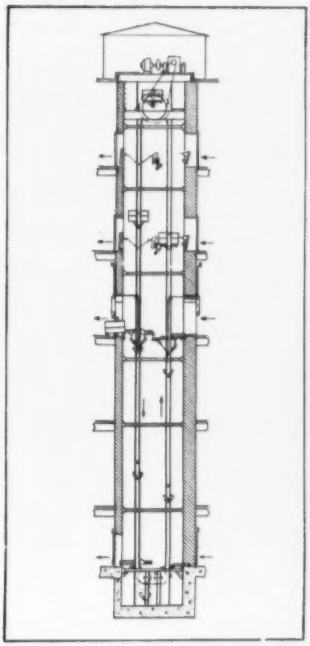
. . . By Tractor and Truck



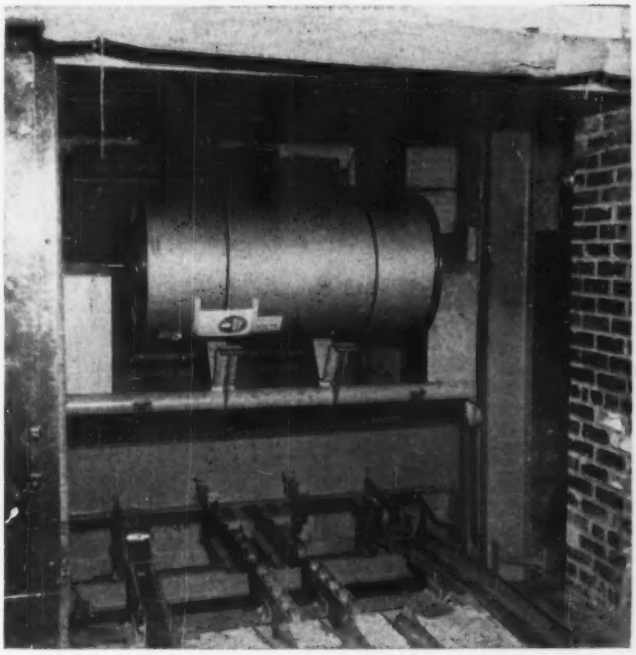
A TRAIN of boxes containing empty and full spooler bobbins is moved by tractor along the second-story warehouse runway.

30,000 LB. of tire cord is loaded in a truck in less than 30 min. at this sheltered loading area cut into the warehouses.

Here's How They Transport
. . . *By Automatic Elevator*



A SIX-STORY TRAY ELEVATOR, controlled by push-button switches, moves boxes, beams, and rolls of cloth upstairs and downstairs.



A BEAM OF YARN is carried up by the tray elevator. The two holders in front of the beam (not in use here) are needed for support when a box of yarn is loaded on the elevator. Speed of elevator is 30 ft. per min.

It Cost $40,000, But It's Worth It

An automatic tray elevator was installed by Firestone to operate between the five floors and basement.

The elevator, bought from Gifford-Wood Co., Hudson, N. Y., was designed to handle trucks and beams and is arranged so that loading and unloading can be done at any floor. It consists of a double chain 87 ft. long, with suspended trays spaced at 15-ft. intervals.

At each unloading point, a short gravity-roller section helps in unloading materials. All loading is done on one side, the up-travel side; and all unloading is done on the down-travel side at each floor. At the loading points, the trucks and beams roll into place by gravity and are picked up by the trays. The elevator is loaded manually but discharges the load automatically at the floor selected by the person loading the material.

Many precautions to insure the safety of the operators have been taken in the construction of this equipment. For example, fire doors at each floor will close automatically in the event of fire; and microswitches are used in numerous locations to insure proper placement of the material before it is picked up by the trays.

The elevator operates in this manner:

The operator determines the floor at which he desires to discharge the material and turns the five-position selector switch to the desired floor. With the loading fingers at the loading point in a "down" position, he pushes a truck onto the elevator and presses the starter button. The loading fingers deposit the box on the tray, and the elevator advances 15 ft., or until the next tray comes into place when the elevator stops. This procedure is repeated. and the trays are unloaded at the selected floor automatically.

The operator can clear all trays by holding down the start button until all loaded trays have been discharged.

$200,000 Worth of Light

Convinced that the elimination of eye strain is as important as preventing muscular fatigue, Firestone took steps to make its Gastonia plant one of the best lighted in the nation.

The installation of 4,525 fluorescent lighting units at a cost of over $200,000 was one of the most important postwar developments in the plant. This installation increased average lighting from 6 foot-candles to 22 ft-c. in all departments except weaving, where the average is 34 ft-c.

By providing employees with better lighting to do their jobs, the company improved its products, reduced accidents, and increased production. Equally important is the improvement in the health of employees resulting from the elimination of eye strain.

ASHCROFT TABLES FOR MACHINE INTERFERENCE

p	N=1	N=2	N=3	N=4	N=5	N=6	N=7	N=8	N=9	N=10
0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
.01	.99	1.98	2.97	3.96	4.95	5.94	6.93	7.92	8.91	9.90
.02	.98	1.96	2.94	3.92	4.90	5.88	6.85	7.83	8.81	9.73
.03	.97	1.94	2.91	3.88	4.84	5.81	6.77	7.74	8.70	9.66
.04	.96	1.92	2.88	3.84	4.79	5.74	6.69	7.64	8.58	9.52
.05	.95	1.90	2.85	3.79	4.74	5.67	6.61	7.53	8.45	9.37
.06	.94	18.8	2.82	3.75	4.68	5.60	6.51	7.42	8.31	9.19
.07	.93	1.86	279	3.71	4.62	5.52	6.42	7.29	8.15	8.99
.08	.93	1.85	2.76	3.67	4.56	5.44	6.31	7.16	7.98	8.76
.09	.92	1.83	2.73	3.62	4.50	5.36	6.20	7.01	7.78	8.50
.10	.91	1.81	2.70	3.58	4.44	5.28	6.08	6.85	7.57	8.21
.11	.90	1.79	2.67	3.53	4.38	5.19	5.96	6.68	7.33	7.89
.12	.89	1.77	2.64	3.49	4.31	5.10	5.83	6.50	7.08	7.55
.13	.88	1.76	2.61	3.44	4.24	5.00	5.69	6.31	6.81	7.19
.14	.88	1.74	2.58	3.40	4.18	4.90	5.55	6.10	6.53	6.83
.15	.87	1.72	2.55	3.35	4.11	4.80	5.40	5.90	6.25	6.48
.16	.86	1.71	2.52	3.31	4.04	4.70	5.25	5.68	5.97	6.14
.17	.85	1.69	2.50	3.26	3.97	4.59	5.10	5.47	5.70	5.82
.18	.85	1.67	2.48	3.22	3.90	4.48	4.94	5.26	5.44	5.52
.19	.84	1.66	2.44	3.17	3.83	4.37	4.79	5.05	5.19	5.24
.20	.83	1.64	2.41	3.12	3.75	4.26	4.63	4.85	4.95	4.99
.21	.83	1.62	2.38	3.08	3.68	4.15	4.48	4.66	4.73	4.75
.22	.82	1.61	2.35	3.03	3.61	4.04	4.33	4.47	4.53	4.54
.23	.81	1.59	2.33	2.98	3.53	3.94	4.18	4.30	4.34	4.34
.24	.81	1.58	2.30	2.94	3.46	3.83	4.04	4.13	4.16	4.16
.25	.80	1.56	2.27	2.89	3.39	3.90	3.90	3.98	4.00	4.00

p	N=11	N=12	N=13	N=14	N=15	N=16	N=17	N=18	N=19	N=20
0.000	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
.005	10.94	11.94	12.93	13.93	14.92	15.92	16.91	17.91	18.90	19.89
.010	10.88	11.87	12.86	13.85	14.84	15.83	16.82	17.80	18.79	19.78
.015	10.82	11.80	12.79	13.77	14.75	15.73	16.71	17.69	18.69	19.65
.020	10.76	11.73	12.71	13.68	14.65	15.62	16.59	17.56	18.53	19.50
.025	10.69	11.66	12.62	13.58	14.54	15.50	16.46	17.41	18.37	19.32
.030	10.62	11.57	12.53	13.48	14.42	15.37	16.31	17.24	18.17	19.10
.035	10.54	11.48	12.42	13.36	14.29	15.21	16.13	17.04	17.94	18.82
.040	10.46	11.39	12.31	13.23	14.13	15.03	15.92	16.79	17.64	18.48
.045	10.37	11.28	12.18	13.08	13.95	14.82	15.66	16.48	17.27	18.03
.050	10.27	11.16	12.04	12.91	13.75	14.57	15.35	16.10	16.81	17.45
.055	10.17	11.04	11.89	12.71	13.51	14.27	14.98	15.64	16.23	16.75
.060	10.05	10.90	11.71	12.49	13.23	13.92	14.54	15.09	15.56	15.93
.065	9.93	10.74	11.51	12.24	12.91	13.52	14.04	14.47	14.80	15.04
.070	9.80	10.57	11.29	11.96	12.55	13.06	13.47	13.78	14.00	14.14
.075	9.65	10.38	11.05	11.65	12.15	12.56	12.87	13.08	13.20	13.28
.080	9.50	10.18	10.79	11.30	11.72	12.03	12.25	12.38	12.45	12.48
.085	9.33	9.96	10.50	10.94	11.27	11.49	11.63	11.71	11.74	11.76
.090	9.15	9.72	10.19	10.55	10.80	10.96	11.05	11.09	11.10	11.11
.095	8.96	9.47	9.87	10.16	10.34	10.45	10.49	10.52	10.52	10.52
.100	8.76	9.21	9.54	9.76	9.89	9.96	9.98	9.99	10.00	10.00
.105	8.55	8.94	9.21	9.38	9.46	9.50	9.52	9.52	9.52	9.52
.110	8.34	8.67	8.86	9.00	9.06	9.08	9.09	9.09	9.09	9.09
.115	8.12	8.39	8.56	8.64	8.68	8.69	8.69	8.69	8.69	8.69
.120	7.89	8.12	8.24	8.30	8.32	8.33	8.33	8.33	8.33	8.33
.125	7.67	7.85	7.94	7.98	7.99	8.00	8.00	8.00	8.00	8.00

An Easy Way To Allow for MACHINE INTERFERENCE

▶ How much time does a down machine lose because the operator is attending to another machine? An operator can work on only one machine at a time, and other machines that stop have to wait for the operator

The accompanying tables give the average number of machines running for a given number of machines attended by one operator. They allow for average production losses caused by machine interference

By T. F. O'CONNOR

PRODUCTION IS LOST when two or more machines stop at the same time and all but one must wait for operator attention. These tables, prepared in England by Ashcroft and used successfully by a company since 1948, may be used to reduce to a minimum the mathematics necessary for calculating the loss by interference.

EVERYBODY CONCERNED with mill production knows that machine-downtime interference (usually called simply machine interference) takes its toll of production.

When a drawing tender, for example, is doffing one drawing frame and another one knocks off, the second frame must stand until the tender finishes doffing the first frame, starts it up, and walks to the second frame.

Or when a loomfixer is fixing one loom and another one is flagged, the second loom must stand until the fixer gets the first loom started and walks to the second loom.

Wherever an operator runs more than one machine and random stops occur on those machines, interference caused by two or more machines stopping at once is unavoidable.

Simple timestudy of the work done by an operator to establish a standard workload does not reflect (and is not directly influenced by) this machine interference. Many mills, however, study machine outage for frequency, cause, and duration of stops and relate the results to operator activity. Such a study reveals and evaluates machine interference.

Fairly complicated calculations will yield a theoretical value for machine interference.

But there is an easier way to compute the loss of production. The accompanying tables, worked out in England by Ashcroft and known as the Ashcroft Tables, quickly show the loss of production through machine interference.

How the Tables Are Used

In these tables:

p (the left-hand column) = the ratio of operator time to machine running time.

For example, if for every 1 hr. a machine runs the operator has to spend 0.2 hr. (12 min.) working on the machine, the ratio of operator time to machine-running time is $0.2 \div 1 = 0.2$. In the left-hand column of the table, you would locate the p value 0.20.

N (at the top of the table) = the number of machines the operator tends.

If the operator runs five machines, you would locate the $N=5$ column.

Now, if you trace the p value of 0.20 to the right until you reach the $N=5$ column, you find the value of 3.75. This 3.75 is the Ashcroft number, usually called the A number. It represents the total production that can be expected from the five machines in one hour by an operator of average efficiency.

[The A number may be thought of in terms of percentage. In this case, the 3.75 would be 375% where 500% is the absolute maximum (5 machines × 100% of available time).]

Efficiency for the job would be 3.75 (Ashcroft number) ÷ 5 (number of machines) = 0.75, or 75%.

Interference Is Allowed for

In the first line of the table, the p value is zero. This value means that the machine runs constantly without stopping for attention by the operator. Efficiency is 100%; and under $N=5$ where the operator tends five machines, the Ashcroft number is 5.00.

But in the second line, the p value is 0.01. In this case, the machine runs 1 hr. and stands 0.01 hr. (0.6 min.) for operator attention. With such a short and infrequent stoppage, there is no machine waiting on the operator; and under $N=5$ the Ashcroft number is 4.95, an efficiency of 99%.

However, as operator attention increases, loss from interference shows up. Take $p=0.20$ for example. The machine runs 1 hr. and is stopped 12 min. for operator attention. If the operator tends only one machine, there is no interference (no machine waiting for operator attention). The efficiency would be 83.33% (60 min. of operation in every 72 min.).

However, when more than one machine is run, stops begin to coincide and interference takes place. At a five-machine load ($N=5$ in the table) efficiency drops to 75% (3.75 ÷ 5).

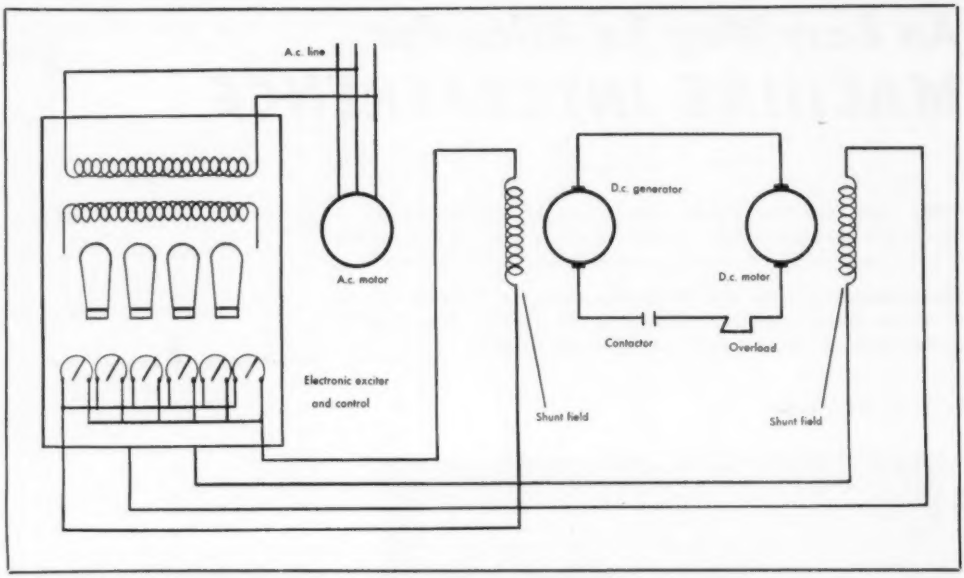
The difference between 83% (for one machine) and 75% (for five machines) is the loss caused by machine interference.

Theory and Mathematics

The problem of interference is encountered in semiautomatic machine work. These machines are usually arranged in banks, but each machine is capable of being stopped and started independently. Each bank is in charge of one operator, and the individual machine stops occur at random.

When an operator attends only one machine, a stoppage can obtain immediate attention. So in setting a standard-time cycle, there are only two factors to take into account: (1) the total machine-running time per cycle T, and (2) the total operator-attention time per cycle t. The net cycle time H would be in this case:

(Continued on page 246)



THE RELIANCE VARIABLE-SPEED DRIVE used on Reading and Kalio full-fashioned hosiery machines receives alternating electrical current from the power line and converts it to direct current by a motor-generator set.

Here's a Maintenance Program For VARIABLE-SPEED DRIVES

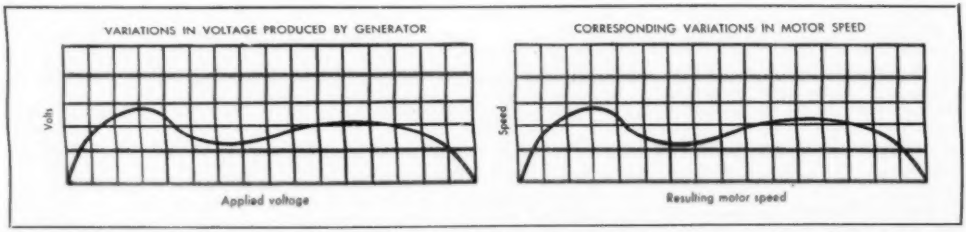
Probably the most neglected part of a Reading or Kalio full-fashioned knitting machine is the variable-speed drive. At Vanette Hosiery Mills, Dallas, Tex., maintenance work is scheduled for—

- **Motors**
- **Generators**
- **Electronic control**
- **Contactor panel**

By H. B. LeFEAUX, Consulting Editor, TEXTILE WORLD

IN A FULL-FASHIONED HOSIERY MILL, it is probable that the source of power for driving the machines is the most neglected part of the machine. As long as electricity is supplied to the motor and the motor turns the machine, it is taken for granted that everything is all right.

Today, with direct-current motors and electronic control panels, we must have regular inspection of these parts



MOTOR SPEED corresponds closely with the d.c. voltage produced by the generator and varies as the voltage impressed across the motor terminals varies. Electronic controls keep voltage and speed adjusted to the machine load.

THE RELIANCE MOTOR should be greased every 6 mo. with a good grade of soda-soap grease.

AIR-FILTER CARTRIDGES from the contactor panel and control box are cleaned with a water hose and dipped in oil every 2 mo.

at least every 2 or 3 mo. if their life is to be prolonged and the electrical equipment is to be kept operating at top efficiency. Under normal conditions the drives on full-fashioned knitting machines require the same care that should be given any direct-current motor or generator.

The Reliance VS Drive on the Reading and Kalio machines consists of a direct-current motor with shunt characteristics: that is, the speed tends to remain constant for all loads. This drive is an improvement over the old-type alternating-current motor because with that motor we got a difference in speed under different loads.

The Reliance VS Drive uses a motor-generator set with electronic excitation and control. The combination provides a variable-voltage system whereby adjustable speed is obtained from an alternating-current power supply.

Clean and Grease the Motor Every 6 Mo.

The Reliance d.c. motor used on the Reading and Kalio machines is 5 hp., equipped with single-row double-shielded ball bearings. The double-shielded bearings, of course, last longer than open bearings because of the grease retained within the shields and in the bearing housing from the initial filling. Experience has shown that it is good practice to grease these bearings every 6 mo.

The routine we follow is:

1. Remove the plugs from the filling hole and drain hole, and drain out the old grease.
2. Force new grease through the filling hole until excess grease appears at the drain hole.
3. Replace both plugs and wipe the excess grease off the motor at the drain plug.

Only a good grade of soda-soap grease that is neutral and nonfibrous and has a 300 or 350° F. melting point should be used.

A regular inspection should be given the motor commutator and brushes. The commutator should be kept clean and free from oil. If it needs cleaning, wipe it off with a linen rag. If it shows signs of burning or becomes dark, use a No. 000 sandpaper or commutator stone to remove all signs of carbonization. We prefer to use the commutator stone because it does a neater job.

When you are sure that the commutator has been thoroughly cleaned, check the brush holders and make certain that they are clean and that the brushes slide freely, touching the commutator at all times. Firm tension on the spring is necessary to hold the brushes against the commutator.

Check the Generator

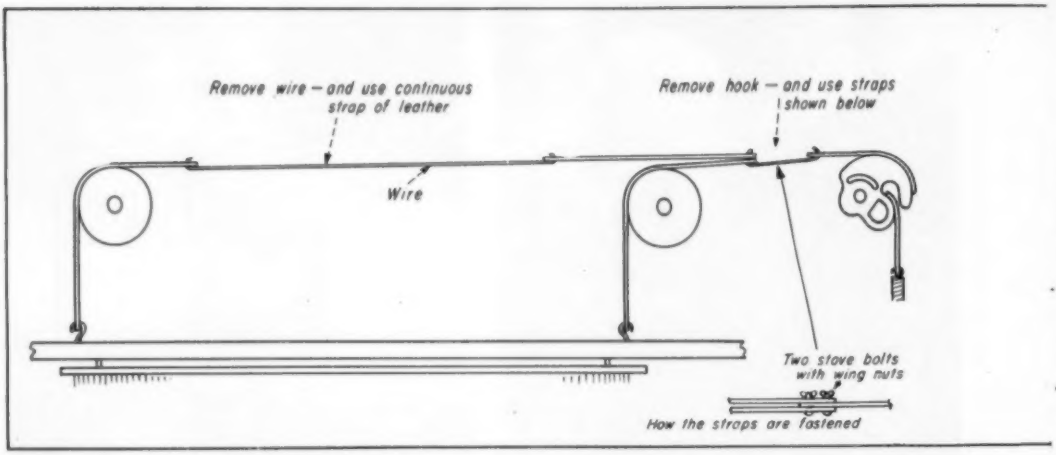
The Reliance generator requires the same attention as the motor so far as the brushes and commutator are concerned. When new brushes are installed, always sandpaper the ends of the brush bristles until they conform to the curvature of the commutator. This sanding is done by working the sandpaper back and forth with the abrasive side of the sandpaper to the brush until the brush fits the curvature of the commutator.

The contactors in the control panel should be checked often for excessive wear or burning. Burning will sometimes cause the machine to fail to start or, in some cases, even fail to stop because sticking contactors fail to operate properly.

The bearings in the generator should be greased every 6 mo. with the same type of grease that is used in the motor bearings.

One important thing that must be watched is to be sure that renewable fuses are never installed in the rectifier plate. These fuses are there to protect the tubes against short circuit or faulty operation of the tubes, and it is possible sometimes in replacing these tubes with renewable fuse links to get the wrong size. The fuse would then fail to protect the tubes against short circuits.

(Continued on page 203)


Remove wire — and use continuous strap of leather
Remove hook — and use straps shown below
Wire
Two stove bolts with wing nuts
How the straps are fastened

THE DWIGHT TOP HARNESS MOTION on a loom wears badly at the point where hooks connect the sections of strap. This wear can be reduced by: (1) using two 3/16-in. bolts with thumb nuts to fasten together the three pieces of strapping near the compensating sheave

How To Make Your LOOM LEATHERS

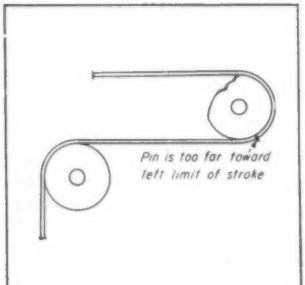
Here are practical examples that can help reduce the cost of your loom leathers. About half the total supply cost of looms is spent on leathers (leather or rubberized fabric). Here's how to save on—

- **Checkstraps**
- **Harness strapping**
- **Pickers**

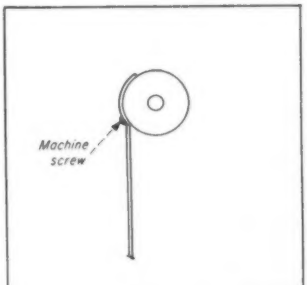
By RICHARD B. PRESSLEY, Assistant Editor, TEXTILE WORLD

LOOM-LEATHER ANNUAL COSTS are approximately one-half the total loom-maintenance cost in the average mill.

Much of the money spent on leathers is wasted, since leathers are ordinarily replaced, not because of normal wear, but because they are selected for a job that they were not made to do or because they are abused by improper loom settings. Harness strapping, for instance, will last only two

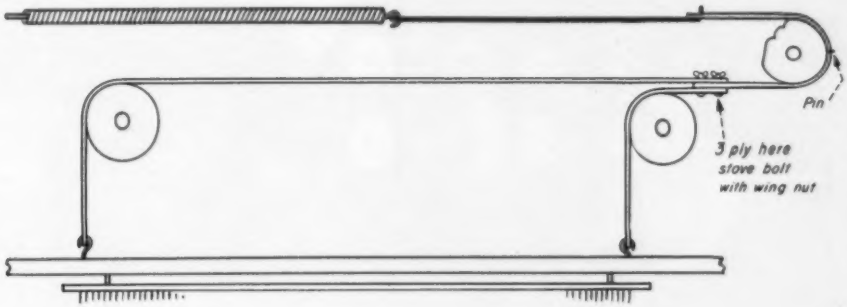


BROKEN STRAPS RESULT when the compensating sheave is set so that the pin does not center the stroke of the strap movement as it should.



SET THE ROLL on roll-top motions so that the screw in the strap will never be pulled against the screw when the harnesses are in the open position.

A ONE-PIECE loop strap for Brown spring-top motions will not come loose because the spring tension is evenly distributed on the strap.



and (2) using a continuous strap to eliminate the wire connector now used in the long strap. The sketch above shows the setup after the suggested change is made.

Last Longer

or three days on the Dwight spring-top harness motion if the pin in the compensating sheave is set out of time.

To make checkstraps last longer:

1. Reduce the power on the picker sticks, and loosen the binders so that the shuttle will float into the shuttle box gently.

2. Reduce the tension on the heel spring. Too much heel-spring tension pulls the picker stick through the checkstrap and makes it necessary to tighten the binder to check the shuttle.

With these settings, the pressure of the finger against the checkstrap can be reduced and the checkstrap will wear less at the side and also at the end of the power stroke because it will have little friction to overcome.

Boosters for checkstraps will often double the life of the checkstraps. The boosters can be made from pieces of old checkstraps or can be made to your specifications by most leather-goods manufacturers.

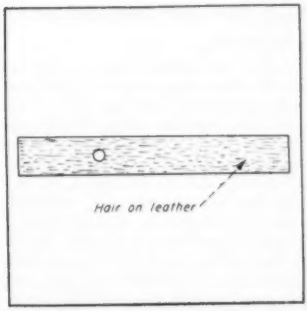
Binder Leathers Must Be Protected

Binders that are too tight are the main source of binder wear. If looms pick harshly, the checkstrap will not check the shuttle and, consequently, the binders have to be tightened. Then both the binder leather and the box-plate leathers wear quickly.

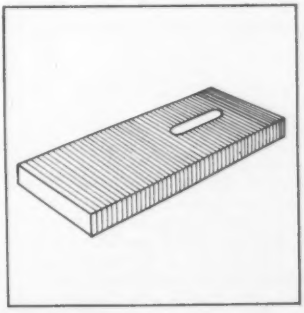
The harsh picking action ordinarily results from a worn picking motion. The only thing to do is to overhaul the picking motion if binder-leather costs are to be cut. The savings in leather will more than offset the cost of overhauling the picking motion, and loom performance will also be improved.

Shuttles are sometimes thrown too high in flight, and the abrasive action of the shuttle against the binder leather scars the leather. Box-top-plate leathers are frequently broken by high-thrown shuttles.

Shuttles are thrown high by high-set harnesses, pickers out of parallel, excessive picker-stick power, and misaligned lay beams. Basic loom repairs and settings must be made to correct these loom faults.



A CHECKSTRAP BOOSTER will double the life of checkstraps if it is properly made and applied to the loom. Hair-on or chrome leather is good.



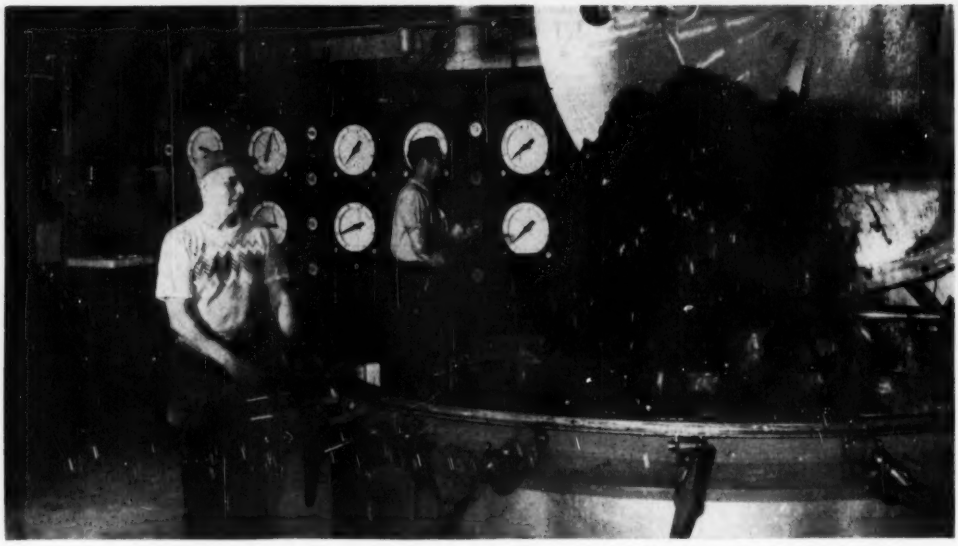
REVERSE THE PLIES of leather on both the front and back picker-stick bumpers on S-5 and S-6 looms to multiply the bumper's life.

You Can Save on Harness Strapping

If you're running roll-top harness motions, your strapping cost isn't likely to be high; but faulty harness adjustments can wear out the straps fast. The roll should be centered between the two straps so that the harness at the bottom shed of the warp will not pull against the screw that holds the strap to the roll.

Dwight top harness motions must be checked often to see that the compensating sheaves are properly divided.

(Continued on page 288)



RAW-STOCK DYEING here is controlled from an instrument panel adjacent to the dyehouse office.

Mohawk Carpet Mills Controls Quality By INSTRUMENTATION

▶ In the laboratory—by recording testers that keep a permanent record of all necessary data

▶ In the dyehouse—by automatically feeding acid to dye baths and by controlling the dyeing cycle, time, and temperature

▶ In twist setting—by controlling air temperature in the skein dryers

▶ In slashing—by controlling size-cooking temperature and time, storage temperature, and size-box level and by controlling and recording dry-can and size-box temperatures.

MANY PHASES OF CARPET MANUFACTURE can be protected against errors that occur in mass-production methods. Human error can be minimized and quality production assured by proper instrumentation. Mohawk Carpet Mills, Amsterdam, N. Y., has proved that instruments pay for themselves.

Know Your Raw Material

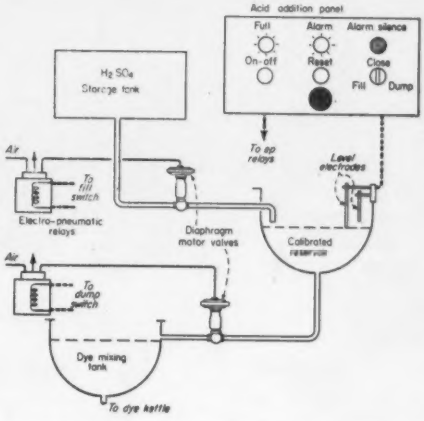
Quality starts with an understanding of the basic fiber from which the carpet is made. A research-and-development section where basic fibers can be tested for many characteristics such as strength, elasticity, crimp, length, fineness, and other important factors has been installed.

Tensile-strength tests to determine if the fiber meets specifications have a very important bearing on future operations. Mohawk laboratories use a Schaevitz fiber tensile-strength tester. The basic recording instrument employed in this measuring system is the Brown ElectroniK potentiometer, modified to operate with the Schaevitz linear variable differential transformer. The transformers for this purpose have shown an accuracy of 0.001 in. for a range of 0.1-in. movement of the transformer armature. The calibration of the unit is in grams so that the weight required to rupture the fiber will be so recorded.

Keep Time and Temperature Controlled

Of all the critical variables encountered in the process of dyeing that are under constant surveillance, two in particular are most likely to be neglected. These two variables—time and temperature—are the most simply controlled. Brown ElectroniK potentiometers were adapted to do the job.

In Mohawk's new dyehouse there are nine raw-stock dye kettles. Eight of the kettles are 1000-lb. units, and the other is a 250-lb. machine for processing sample lots. Although each machine is equipped with its own instrument and control system, all of the controllers are centrally located on a single master panel adjacent to the



▶ **Mohawk Carpet Mills devised a system to make acid addition to the dye bath automatic. In the sketch (left), it may be seen that the system is comprised of three main sections and a control panel. The sections are the main storage tank, the calibrated reservoir, and the dye mixing tank.**

The system is operated by a switch-button control for each designated operation. To fill the reservoir, the selector switch is put in the Fill position, to energize an electro-pneumatic relay to open the diaphragm motor valve.

When the acid reaches the level of the lower electrode, another circuit is completed. The electro-pneumatic relay is thus de-energized and the Full signal lights.

In the event of air failure, the system will go to the Closed position, since all the valves open under air pressure. A separate level-measuring system provides an additional safety precaution. In the unlikely event that the primary control system does not shut off at the calibrated level and the acid continues on to the higher level electrode, the second circuit energizes a buzzer and signal light to provide both visual and audible alarms.

dyehouse office. The instruments on the stock dye kettles have a range of 75 to 225° F.

Control is exercised pneumatically through a narrow-band throttling unit incorporated within the instrument. At the start-up of a kettle, two steam valves are opened to utilize the full heating capacity and bring the liquid to correct temperature as rapidly as possible. As the final dyeing temperature is approached, a mercury-type switch in the instrument cuts out the large steam valve and actuates a vernier timer.

The dyeing process is carried on with the instrument operating the small valve, since the heat requirements are only those caused by losses through conduction and radiation. By using the smaller valve during the final stages of dyeing, a better throttling characteristic can be obtained.

Dyeing time is set on the panel-mounted timers, and when the cycle is completed the process is automatically shut down.

Instruments Aid Other Processes

The process of raw-stock dyeing is, generally speaking, reserved for large quantities where a single shade will be put into continuous production. The advantage is found in better blending characteristics.

Some of the yarn is skein-dyed in Hussong units. Here, the same type of control system is used to guide the time-temperature variables as is used for the raw-stock dye kettles. The eight largest Hussong units in the skein dyehouse are equipped with ElectroniK potentiometers.

The controller applied to Mohawk's 180-lb. sample machine is a Brown time-temperature control thermometer. The thermometer is complete with an integrally built timer and process-stage signal lights.

Twist setting is followed by a drying operation. It is important that temperature be controlled to prevent fiber damage and to effect operating efficiency.

The skein dryer is a single-apron three-zone unit with each zone controlled by a Brown indicating thermometer graduated from 50 to 400° F. The bulbs of the individual thermal systems are inserted in the output sides of the circulating fans so that the instruments will accurately indicate the air temperature to which the skeins are exposed.

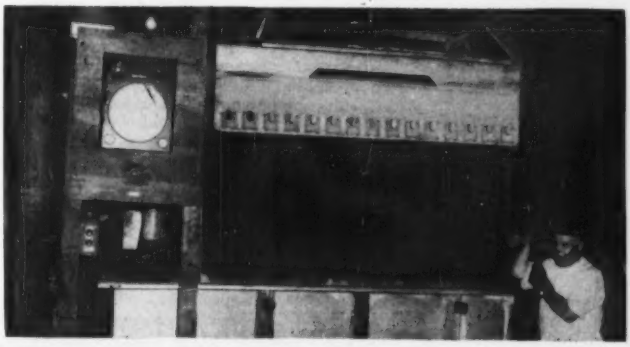
In the slasher room, the sizing is prepared in a cooking kettle where, through the proper time-temperature combination, the size is brought to its proper viscosity. This operation is carried out automatically by the Brown elapsed-time control system for size cooking.

At the completion of the cooking operation, the size is stored in a separate kettle where a thermometer controller maintains a fixed temperature that will hold the size to an optimum viscosity value.

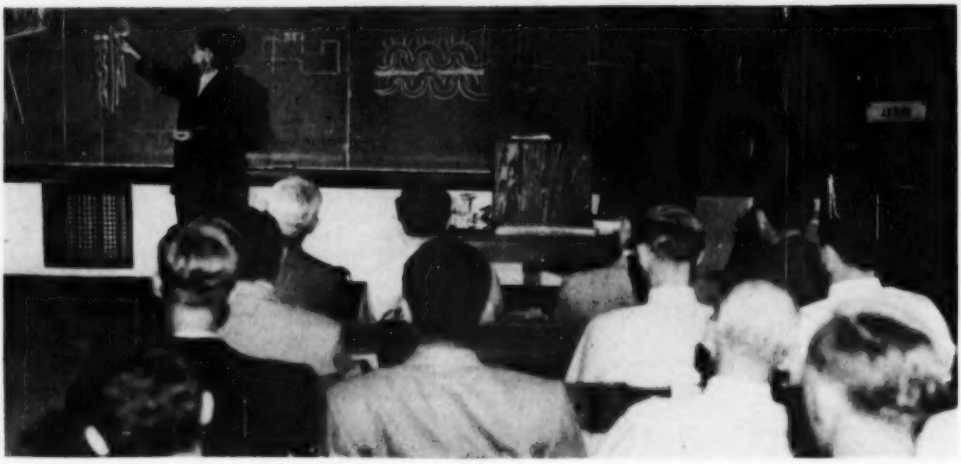
The slasher has 13 cylinders, and each two cylinders are controlled by a Brown two-pen recording thermometer controller so that the proper drying gradient will be maintained.

The level of the liquid in the size box is important, since it has a bearing on the immersion time and the amount of size picked up by the yarn. To maintain the proper size level, a system similar to that used in the acid-measuring system is employed.

Down the length of the slasher there are seven instruments. Each is a two-pen dual controller; thus 14 records and control functions are provided, 13 of which are for cylinder temperature and one for recording size-box temperature.



SKEIN DYEING in this Hussong unit is controlled by a pneumatic control thermometer with an integral timer and process-phase signal lights.



DISCUSSION WAS BRISK for two and a half days at all 30 technical sessions as . . .

Latest PROCESSING METHODS *Were Thrashed Out at Canadian Seminar*

• About 450 technicians from all branches of the Canadian and American textile industry assembled at Queens University, Kingston, Ont., to join in evaluations of new cost-cutting techniques

• Third biennial seminar sponsored by The Textile Technical Federation of Canada was the most stimulating one yet for both practical mill men and research personnel

LOOM-FINISHED-FABRIC Techniques Need Exploring

By FRED FORTESS and GEORGE C. WARD, Celanese Corp. of America

The increased availability of dope-dyed or spun-dyed and package-dyed rayon and acetate yarns presents the challenge of fabrics finished off the loom. The problems resulting from such a development are many and in some cases insurmountable.

Even the best weave-room housekeeping is not going to eliminate soilage, especially from oil and grease. This condition will discourage the production of light shades or patterns containing large white areas. In addition, the variety of hand—both in quality of touch, fullness, and bulk—will be limited by the fact that the sized warp yarn will always be stiff to some degree. In addition, the original yarn lubricant will be present, and this situation will contribute to spotting with dry cleaners.

Granted these restrictions, it is of interest to discuss what may be achieved by loom finishing and to outline the principles available. The primary requirements of a loom-finished fabric depend mainly upon the warp size, which must contribute the following properties:

1. It must permit efficient weaving.
2. The yarn lubricant must resist water spotting and solvent spotting.
3. It must impart a crisp, firm to stiff hand, must be durable to dry cleaning and possibly to washing for some end uses, and should also be removable to permit finishing treatments for other end uses.

These various properties may be achieved to some degree by a careful selection from the following types of water-soluble materials.

Types of Warp Size Used

Ammonium salts of certain carboxyl-containing vinyl copolymers and of ammonia-solubilized casein will lose sufficient ammonia on the slasher drying cans to render these materials insoluble in water and in neutral detergents. They will be readily scourable in alkaline-built soaps and will thus provide resistance to water spotting while they still can be rendered removable if desired.

A piece of loom-finished fabric sized with an ammonia-solubilized vinyl copolymer and treated with a water spot in the center will produce a detectable change in appearance by reflected light. However, this size or finish is completely removable with an alkaline soap scour.

Gelatin and casein solutions containing formaldehyde or typical cross-linking materials of the urea-formaldehyde and melamine-formaldehyde types may be rendered durably insolu-

ble. This approach has the advantage of giving the warp-preparation and weaving people a size with which they are completely familiar, since both gelatin and casein are basic sizes for acetate yarn. In addition, the fabrics will be resistant to fungus and other bacterial attacks because of the presence of formaldehyde in the cross-linking agent.

Special precautions are required when formaldehyde is used at a size-pan temperature of 145 to 155° F., since cross linking begins here. However, many of the urea-formaldehyde and melamine-formaldehyde derivatives used to resin-treat 50-50 acetate-rayon blends are less active than formaldehyde, and even in the absence of acid catalysts they will produce insolubility at dry-can temperatures of 200 to 220° F. In addition, special nonpolymerizing urea derivatives can be used.

A typical formulation for a taffeta would be:

50 lb. of 225-gel-strength gelatin
5 lb. of cross-linking agent (solids basis)

for a 100-gal. mix. The gelatin is dissolved in the standard fashion, the solution cooled to 145 to 150° F., and the cross-linking agent mixed in. At least one, and preferably two, dry cans should be covered.

We made up a sample that compared water spotting on a fabric in which the navy-blue warp yarn *A* was treated with a regular size and *B* was sized with a gelatin that was cross linked. The filling yarn was natural white for contrast. By reflected light, the insolubilized size was unaffected by the water. When properly prepared, this size is not removed by scouring with alkaline-built soap.

Polymers Applied As Emulsions

In principle, the same type of polyacrylic and vinyl resins used in the finishing of acetate fabrics could be applied as a size. Small uniform particle distribution is necessary for uniform penetration. The difficulty to date has been to discover those with sufficient adhesive properties to hold the yarn bundles together during the weaving operation.

This approach, however, offers the possibility of achieving a wide range of hand or feel properties, since an elastic polymer may be used where a soft pliant hand is desired and a stiff polymer used where crisp-bodied fullness is required.

PILE FABRICS Can Be Knit On Most Knitting Machines

By JAMES H. BLORE, Provincial Institute of Textiles

To satisfy the recent demand for knitted pile fabrics, several old methods of manufacture are being brought back into use, and new ideas are being conceived.

These pile fabrics may be known as knitted-plush, loop-fabric, or terry cloths and can be made on both latch-needle and spring-needle machines. The loops may be cut, brushed, napped, or used as is. Although cutting can be accomplished on certain latch-needle machines, it is customary to finish the cloth as a subsequent operation.

MR. BLORE, who delivered this paper on pile fabrics at the Canadian Textile Seminar and led the discussion afterwards, joined the staff of TEXTILE WORLD on November 10.

The base of circular-knit pile fabrics is a plain jersey construction, while the warp-knit plush base may be any orthodox tricot stitch.

Circular Latch-Needle Jersey Machines

These machines offer a wide scope of pile fabrics and very good production. It is possible as yet to produce only single-face plush. These machines are similar to conventional jersey machines, with the exception of the sinkers, sinker-cam ring, yarn carriers, and stitch cams.

The yarn carrier has two feed holes in the shape of porcelain tubes situated in such a position that one yarn feeds to the needle, to be drawn over the sinker in the normal manner to knit plain jersey, while the other yarn is fed in such a position as to be drawn over the nib of the sinker to form a long jersey loop that becomes a plush loop. It is several times longer than the base loop. The distance between the top of the sinker nib and the knockover surface therefore determines the height of the pile.

Sinkers are provided with different heights of nib to give three depths of pile. As the top of the sinker nib is flat, the plush loop slides off as the sinker is drawn back at the next feed.

If all sinkers are drawn back as the yarn is fed, a plaited jersey cloth is knitted. If all sinkers are cammed forward by advancing the sinker timing, every sinker will draw a plush loop and an all-over plush will result.

Circular Rib Machines

By means of a special yarn carrier and special jacks or hookless needles in the dial, pile fabrics can be made on circular rib machines. A base of plain jersey is made on the cylinder needles, and an additional yarn is fed over the jacks in the dial by means of a normal yarn carrier. The base yarn is fed to the cylinder needles and underneath the dial jacks by means of a yarn tube.

The dial timing is retarded so that the upper yarn can be fed over the dial jacks but will still be taken by the cylinder needles. The jersey loops will be locked in the normal manner with 1x1 timing; and when the dial cast-off is made, the pile loops drop from the jack.

The length of pile is determined by the height of the dial. Raising the dial causes a longer pile to be formed, since it increases the distance between the dial jacks and the cylinder needles.

Increased tension on the fabric may be necessary with the dial needles in a high position.

Circular Spring-Needle Machines (Wildman Type)

Although single-face pile fabrics can be produced on a Wildman spring-needle machine equipped with special sinkers and a modified yarn carrier, very heavy plush fabrics can be knitted without additional equipment. This method reduces production because several feeds are necessary to produce one course. Two feeds are necessary for a very light pile, and four for a heavy pile—which would reduce production to two courses per revolution on an eight-feed machine. The needles would be arranged alternately long and short butts, with split raising cams suitably arranged to give the following procedure:

In a light pile—

Feed No. 1 Tuck: long-butt needles
Welt: short-butt needles
Feed No. 2 All needles knit

For a heavy pile—

Feed No. 1 Tuck: short-butt needles
Welt: long-butt needles
Feed No. 2 All needles knit
Feed No. 3 Tuck: long-butt needles
Welt: short-butt needles
Feed No. 4 All needles knit

The tuck feeds will be set to draw a long stitch, the press cam will be stationed in its outer position, and the needle pull-down cam will be in a high position. The knitting feeds, threaded with a fairly strong yarn, will be set to draw as tight a stitch as possible.

The tuck feeds can be threaded with a cotton yarn to produce an all-over terry effect, acetate yarns can be used for brushing, and fancy twist yarns can be used to give novelty loop cloth. On a 28-cut machine, 150-den. rayon or 30s cotton can be used to give good results.

Loopwheel Machines (Tompkins, Crane)

Double-plush fabrics from loopwheel machines are not usually considered pile fabrics, but this cloth does produce an excellent surface for napping; and many knitted fleeces and napped goods are produced from this fabric.

The backing yarn that constitutes the napping surface is tied to the jersey background cloth by a fine cotton yarn and therefore appears on only one side of the cloth. The backing yarn may consist of a good-quality wool, mohair, or other expensive fiber, while the side of the cloth used as the inside of the garment may be of cotton.

After suitable finishes, these cloths can seldom be told apart from woven cloths, except for the jersey back.

Single-plush fabrics do not use a tying-in thread. Consequently, the backing yarn is laid in between the jersey loops in a manner similar to filling yarns in a woven fabric. This fabric is not often napped; but when fulled, it produces a stable cloth.

Raschel Machines

The comparative slow production of pile fabrics on raschel machines has probably retarded the development of these cloths, but fabrics with dense pile and long loops can be knitted on standard two-bar machines.

There are several methods that may be used. The method described here requires the use of only two guide bars. The needles on the front bar are substituted with straight points positioned in front of each needle. Special cams are necessary to give the irregular movements of the front needle or point bar.

The points are raised to a high position while both guide bars are swung to the front. The front guide bar shogs over the point while the back guide bar remains stationary. As the back needle bar rises, both guide bars are swung through them and are shogged sideways one needle space so that the needle hooks receive both yarns. The needles descend, causing the fabric loop to close the latches and to pull the two yarns through the fabric loop. The points are still in their high position and do not descend until the fabric loops are cast off the needles, at which time the points are pulled down rapidly to allow the plush loops to drop off.

A more rapid method of pile-fabric construction on a raschel machine is available without special attachments. In fact, two pieces of cloth are constructed at the same time. The needle bars are set wider apart than usual, and at least three guide bars are used.

The front guide bar laps over the front needles only, the back guide bar laps over the back needles only, and the middle bar makes stitches on both bars. The front needle bar therefore produces a cloth from the yarn supplied by the front guide bar, the back needle bar knits a cloth from the back guide bar, and the two fabrics are joined by the yarn supplied by the middle bar.

The cloth thus made is afterwards cut to produce two distinct fabrics.

Back and front guide bars may be threaded with cotton yarn, and the middle guide bar may contain yarns made from wool, dynel, nylon, or other fibers suitable for brushing and cropping. The length of pile may be increased by spreading the bars further apart. Maximum length of pile is limited to the outward swings of the guide bars.

Yarn Number and Density Affect Fabric WATER REPELLENCY

By G. H. SEGALL, Canadian Industries Ltd.

To account for resistance to water penetration in terms of fabric properties, a theory has been developed that is supported by experimental data involving a relationship between the pore size of the fabric and the inter-fiber distance on the surface of the yarns comprising the fabric-pore walls.

It has been shown that good resistance to water penetration is secured when the hydrostatic-pressure resistance (P) of the fabric corresponds with the pressure (P_y) required to force water between the fibers on the surface of the yarns comprising the fabric-pore wall. P is a function of both fabric-pore size and the inter-fiber distances on the surface of the yarn, while P_y is a function only of the latter.

Below are listed some of the typical results obtained.

It is evident that good resistance to water penetration is associated with a high degree of correspondence between P and P_y and that this relationship holds over a wide range of pore sizes. Such correspondence is important because it should cause a rapid dissipation of pressure produced by the impingement of a water drop on the pore.

The new principle of the function of fabric construction as related to the water repellency of textiles may be summarized as follows:

At a given tightness of weave, optimum performance is obtained when the hydrostatic-pressure resistance of the fabric is equal to the inter-fiber-penetration pressure of the yarn surface forming the fabric-pore walls.

In terms of fabric construction, this principle means that the choice of proper yarns with respect to their density in the finished fabric is as important as tightness of weave and the use of a good water-repellent finish.

Variations in weave, thickness, and

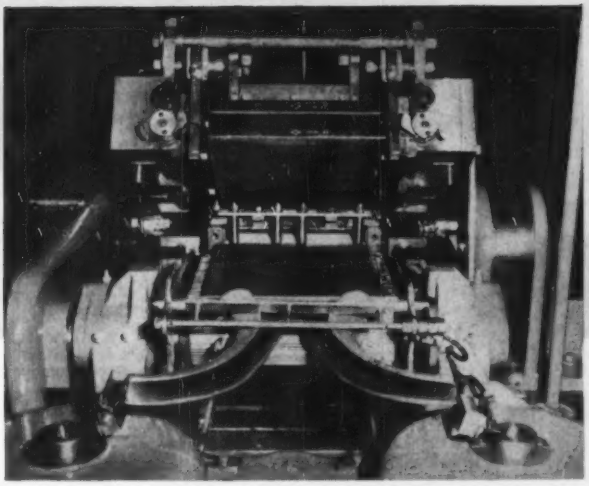
(Continued on page 251)

Fabric thickness (mils)	Pore size (microns)	P (cmH_2O)	Py (cmH_2O)	Drop-penetration test	AATCC rain-test head failure
8.9	13.06	46.3	480	10 cc. in 1 min. 30 sec.	2 ft.
10.2	12.08	55.8	238	10 cc. in 2 min. 30 sec.	2 ft.
11.4	11.84	60.4	190	10 cc. in 7 min. 40 sec.	5 ft.
10.7	14.46	55.6	126	10 cc. in 10 min. 15 sec.	6 ft.
16	23.20	45.3	54	10 cc. in 20 min.	7 ft.
10.6	12.12	80.6	91	10 cc. in 100 min.	>8 ft.
18	10.24	90.2	94	4.2 cc in 180 min.	>8 ft.
13	9.32	98.5	84	10 cc. in 127 min.	>8 ft.
15	9.92	92.1	84.2	10 cc. in 113 min.	>8 ft.

How GILL REDUCERS Are Being Used by Mills

- **Bradford-system open-drawing machines and French-system gills and porcupines are giving way to a combination of the two older methods.**
- **Long-fiber reducing machines in a drawing set lower processing costs.**

By WALTER P. RUTLEY
Holdsworth Gill Screw Co.



SHORTENED FALLER BED, with 72 fallers, helps make higher speeds possible. Screw gears are arranged in such a manner that they remain in time when the head is opened.

TODAY, GILL REDUCERS are, in most cases, replacing the heavy, open-drawing machines used in the Bradford system and, in some cases, the heavy gills and coarse porcupine machines of the French system. This trend means that the sharp dividing line between the Bradford and the French systems of spinning worsted yarns is disappearing and that a new abbreviated system has come into being that is a combination of the two.

There are usually three gills, a reducer, and a rover employed in the new system of spinning worsted yarns. For coarser counts, only a rover may be necessary.

On a conventional Bradford-system layout, where 1/32s yarn is spun with seven operations and the can gill is omitted, there are 576 doublings. If a can gill is used, there are 3,456 doublings. On the short system, for the same yarn number spun in five operations (three gill-reducing operations followed by a reducing and roving operation), there are only 100 doublings.

On a conventional French-system layout, where the same yarn number is spun with eight operations, there are 15,192 doublings. On the short system, with six operations (consisting of an intersecting in the first operation, followed by two operations of gill reducing, followed by a heavy drawing box, an avant finisher, and finisher) there are 576 doublings.

A somewhat newer development is the use of a gill reducer with a balling head, a process run immediately after combing. The balling head is similar to the one used on Continental-type gill boxes, with an eccentric gear drive that assures continuous turning of the balling rolls while the balling carriage is traversing.

Use of Balling Heads

The gill reducer, with the balling delivery employed after combing, eliminates the two finisher operations on Bradford-type gills. Because of closer fiber control, the end delivered on such a balling-head gill reducer is usually found superior in evenness to that produced by a Bradford finisher gill.

Some mills have found an additional advantage in that lighter weights can be produced on a gill-reducer balling head after combing. In some instances, where this finished comb sliver is used for spinning coarse counts, only two gill-reducing operations are used in the drawing. These two gill-reducer drawing operations can draft the stock down to a suitable weight that the rover can handle without impairing established evenness standards.

Typical Layout—Nylon

With the introduction of the Pacific converter, a new field was opened for gill-reducing or pin-drawing machinery. The converted top is put through three operations of gill reducing. An exemplary layout for 100% nylon may be as follows:

In the breaker operation, usually five ends of converted stock per side are fed in. The fallers are pinned 13 pins per in., 17s wire, with the machine arranged for a draft of 10. The delivered sliver weighs about 100 grains per yd.

In the intermediate operations, usually six ends per side are fed in. The fallers are pinned 17 pins per in., 19s wire, with the machine arranged for a draft of 8. The delivered sliver weighs about 75 grains per yd.

In the finisher operation, usually six ends per side are fed in. The fallers

(*Continued on page 212*)

Condensed from a talk given at the Boston, Mass., ASME Textile Div. meeting on mill modernization.

How To Run a Big RAYON-WEAVING JOB

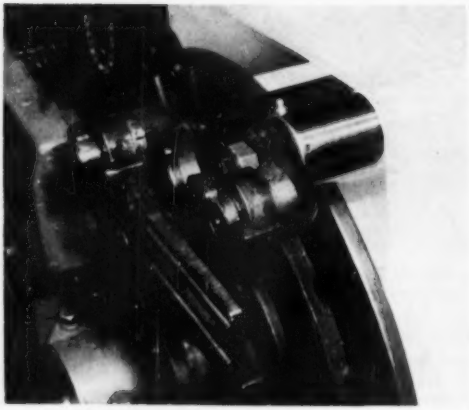
▶ We asked the superintendent of a mill that has several hundred looms how he kept so many looms running. He wrote this story for us. Some of the things you see in his mill are—

Looms in good mechanical condition

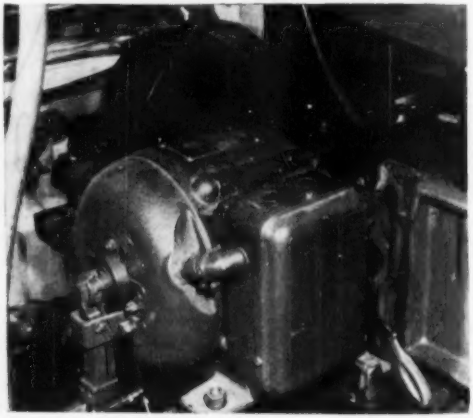
Few loom stops per hour on adequate job loads

Employees who stay ahead of the job

Lots of little things that make a big weave room run



ANTIFRICTION BEARINGS in the whiproll and at the loom stand for the whiproll help prevent barre cloth.



HERE'S THE DIEHL DRIVE. A large group of looms use this drive. Other looms have regular XD drives.

TAKE OVER 1,700 LOOMS on filament-rayon fabrics, add 18 second hands, three overseers, and a superintendent of weaving to the setup, and you have a big job. It takes a lot of planning to keep a job that big going.

Supervision Is Handled This Way

Six second hands on each of three shifts have 285 looms. A second hand has to keep heads up to keep that many looms checked.

These supervisory habits make a good job:

The second hand is on the job 15 min. before the shift changes. He checks his back alleys for warps that will run out. From this report, the overseer of weaving plans the day's work for the warp men and tying-in-machine men.

While the second hand is checking his warps, he also checks the warps for loose or crossed ends in the body of the warp and especially in the selvages. All the weavers know how to keep ends straight, and it isn't much of a job to check them. The check is primarily to prevent loose ends.

After the shift changes and the employees are checked in, the second hands check all looms to see that they are in production. If a warp is out, someone is given the job of putting on a new one; usually, a loom does not have to wait.

A smash hand, or a substitute if the smash hand is on another job, must be on every loom that has a breakout.

Flagged looms are started as soon as possible. It's the production of the first hour of a shift that counts. That hour makes the day's production.

Inspection Prevents Seconds

The loomfixer on the shift that takes over discusses his section with the loomfixer that he follows, and then he inspects the cloth on all his looms with a light (electric extension cord). He inspects the cloth for wrong draws,

large or small ends, jerk-backs, slack and tight picks, creases, and everything else that resembles defects.

He stops the loom when he finds any major defects. Minor defects run on until the fixer has time to correct them.

The weaver inspects the cloth every hour of the shift. About 25 looms are inspected each time, and then the other looms are patrolled to see that they are all running and are making good cloth.

The second hand himself inspects the cloth as soon as all his looms are running. He shows any defects that he finds to the weaver and loomfixer.

By this routine, everyone inspects the cloth and everyone is interested in making good cloth.

What About Seconds Already Made?

When a cloth-room grader has a cut of seconds, she takes a copy of the inspection ticket to the weave-room overseer, and from then on the defect is his job. He gives the ticket to the second hand, and they talk about the defect. The second hand checks the loom and has the loomfixer correct the loom error; then the second hand rechecks the loom.

When a second cut of seconds is made on the same loom, it isn't so simple. That calls for a special pink defect ticket. The overseer takes care of the loom himself then. The pink ticket has a priority over anything else until the loom is fixed.

The whole quality-control program is aimed at this: if few seconds are made, everyone from the overseer down has less checking to do and, consequently, less work to do. That leaves them more time to inspect cloth, keep the looms built up, and to generally prevent seconds.

The overseer of weaving and the superintendent of weaving look at seconds in the cloth room at various times during the shift to catch the drift of the defects so that they can warn the second hands what to look for on the loom.

From 11:30 to 12 o'clock on the first shift, at 6 o'clock on the second shift, and at 2 o'clock on the third shift, the second hands show defective cloth to their weavers and loomfixers. The aim in showing the cloth is not to penalize the employees but to guide them in their cloth inspection.

Loom Maintenance Makes the Job

Empty looms are checked and put in good mechanical condition. New parts are added where they are needed.

1. Worn pick points and balls are replaced.
2. Loom leathers (pickers, checkstraps, bumpers, box plates, and binders) must not be scarred or worn.
3. Picker sticks must be good.
4. The let-off and take-up are reconditioned if they need repairs.
5. Shuttles are replaced if they are worn. If they're not worn, the fur is checked for wear and the fur is replaced if necessary; the eye is checked for pad grooves and for other wear; and the wood surface is polished.
6. All loom nuts are tightened.

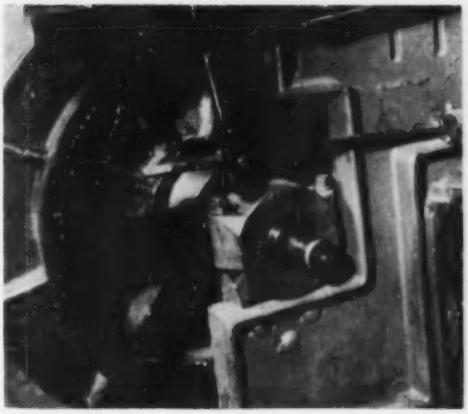
On all new warps, both tie-backs and drawn warps, the reeds are aligned, the harnesses set, the time of the pick set, the stroke of the picker stick set, and other loom settings for special styles made.

How Is the Cleaning Done?

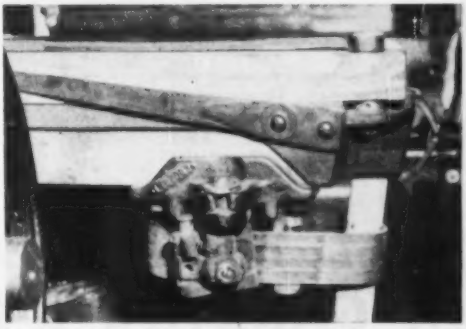
Each employee—batteryhand, weaver, loomfixer, and others who handle yarns—is trained to keep waste yarns off the floor and in metal containers that are positioned throughout the weave room. Less cleaning is necessary, since everyone is interested in keeping the floor clean.

Two sweepers on the first shift drag out from under the looms each day and also keep the floor swept. One sweeper on the second shift and one on the third keep the floor clean but do not drag out.

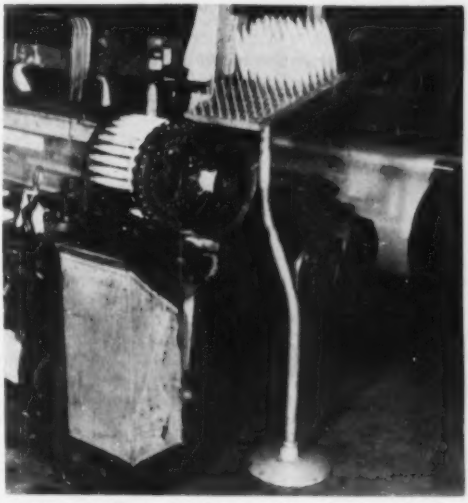
(Continued on page 188)



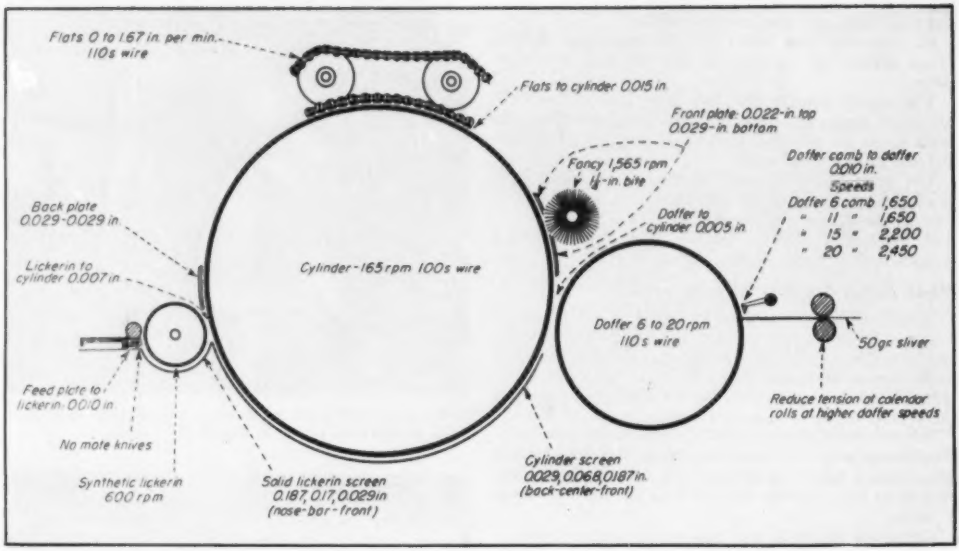
TWO-AND-A-HALF TIMES as much yarn can be put on these 28-in. beams as used to be put on the original 22-in. beams.



FABRIC AND LEATHER endless checkstraps are used on the looms. It takes close loomfixing to box the shuttles on fine-filament yarns.



FILLING ISN'T SLOUGHED OFF the bobbin when the pinboard is located on a stand cemented to the concrete floor.



THESE CARD SETTINGS AND SPEEDS have proved most successful for carding 3-den. 1½-in. nylon staple. Changes made to a standard cotton card include: mote knives removed, cotton lickerin replaced by a synthetic-fiber lickerin, rib lickerin screen replaced by a solid screen, and a fancy roll installed to run in the stripping door.

How To Do a Better Job IN CARDING 3-DEN. NYLON

Here's a set of new mill-tested speeds and settings for carding 3-den. nylon staple that can—

- **Increase production up to 100%**
- **Improve sliver evenness**
- **Lengthen the stripping cycle to 80 hr.**

By J. A. NEWNAM, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc.

DURING THE PAST YEAR many mills have been able to reduce costs in carding 3-den. 1½-in. nylon staple. With proper card adjustments, production rates have been increased up to 100% in some cases, sliver evenness has been improved, and waste has been reduced. In one mill, six cards have been run as long as 80 hr. without loading or need for stripping. These cards are delivering more even sliver, higher production, and less waste than normally experienced in processing 3-den. nylon staple.

The accompanying diagram shows the settings and speeds selected to give the best carding results. These details were reached in a series of spinning-laboratory tests and tried in mills. The settings are applicable to any conventional flat-top card. Slight deviations from the settings given may be required to accommodate the condition of the card; however, limited experience to date has not indicated this deviation to be necessary.

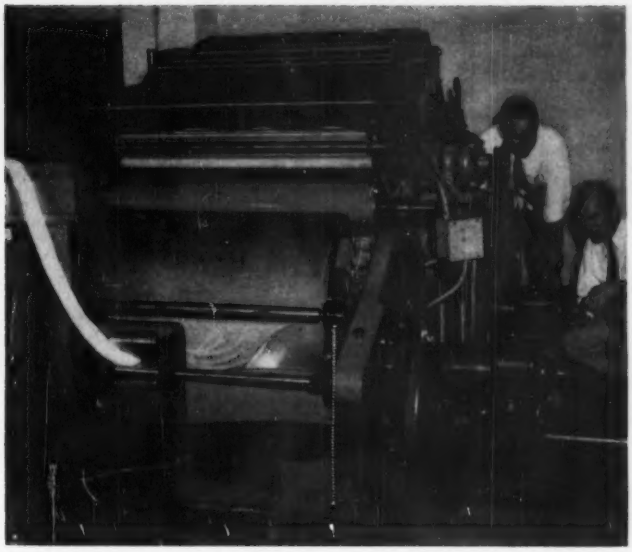
The research reported on here was done on a 1919 revolving-flat card by the Customer Service Section, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., and the Dept. of Textile Research, School of Textiles, North Carolina State College.

Setting of Feed Plate To Lickerin Is Critical

The high mass cohesion of nylon staple emphasizes the importance of the feed-plate-to-lickerin setting. If the setting is too close, it is difficult for the lickerin to pluck the individual fibers from the lap. If the setting is too open, the lickerin pulls out fiber bunches.

The effect of several feed-plate settings on evenness and strippings was tested. Although a 0.22-in. setting appears best from the standpoint of good evenness and low strippings, consideration must be given to subsequent processing observations.

In carding and drawing, it was apparent that both 0.017- and 0.022-in. settings were too open. Fiber bunches picked out by the lickerin went through the entire card, were observed in the card web, appeared as married fibers throughout the entire spinning process, and caused uneven yarn. This



THE CARD used to test the recommendations given in this article was equipped with adjustable-speed drives on the various revolving parts so that isolated speed changes could be made. Checking the speeds are the author, Jim Newnam, left, and J. F. Bogdan of N. C. State Research Div.

observation led to the selection of 0.010 in. as the best setting for the over-all spinning system.

Nylon's Toughness Permits High Lickerin Speed

When the lickerin transposes fewer fibers per tooth to the cylinder, the stock is opened better and a more even distribution of fibers over the surface of the cylinder is obtained. This fiber distribution results in better sliver quality.

The two adjustments to the card that can be made to reduce the fibers per tooth in the lickerin are (1) speeding up the lickerin and (2) reducing the feed rate. The latter adjustment is undesirable because of low productivity.

Work with higher lickerin speeds on various fibers has been rather limited because of expected damage to the fiber. However, nylon staple, because of its toughness and high strength, allows higher speeds without fiber damage. Its cleanliness and freedom from foreign matter also permit the use of a solid screen under the lickerin.

Lickerin speeds from 200 to 600 rpm. were tried and the sliver tested for evenness and total strippings. These tests show that the higher lickerin speed reduces strippings and improves sliver evenness. A speed of 600 rpm. was selected as the highest practical rate that can be used on most cards without additional investment in auxiliary drives. Also, several limited experiments indicated that a point of diminishing return is reached beyond 600 rpm.

Comparative results at three lickerin speeds were:

Speed	*Strippings*	*Variation*
200(rpm.)	0.287(lb.)	12.1(%)
400	0.330	9.3
600	0.270	9.2

Speed of Flats Affects Strips

The tests involving varying speeds of the card flats revealed an inverse relationship between sliver variation and total strippings. As the speed of the flats is increased, the strippings became slightly higher and the sliver more uniform.

Comparative results at three speeds were:

Speed	*Strippings*	*Variation*
0(in. per min.)	0.24(lb.)	11.8(%)
1.67	0.26	9.8
2.00	0.268	9.5

Flats-to-Cylinder Setting Opened Because of Nylon's Bulk

For any synthetic fiber, the flats-to-cylinder settings are determined largely by bulk or loft of the fiber. As the loft increases, the setting is normally opened. If the setting is too close, the fibers, forced into the wire, tend to load the cylinder and produce a neppy, uneven sliver. If the setting is too open, there will be a lack of carding action that allows bunches of fibers to pass through the card into the card web and ultimately result in uneven yarn.

Nylon has a bulk that permits a more open setting between the flats and cylinder. Four flats-to-cylinder settings were tested. A setting of 0.015 in. produced the best results with respect to sliver evenness. Observations during carding indicated that 0.020 in. was too open because the resultant web contained married fibers.

Comparative results of the settings were:

Setting	*Strippings*	*Variation*
0.010(in.)	0.354(lb.)	9.9(%)
0.012	0.348	8.2
0.015	0.337	7.3
0.020	0.295	8.8

Fancy Roll Is Necessary Because of Crimp

A fancy roll is needed to card nylon staple on a flat-top card. The reason for this requirement seems to be that the crimp is temporarily removed when the fiber is tensioned in carding. While uncrimped, the fiber becomes meshed into the cylinder clothing, tries to creep back to its crimped state, and locks itself against the individual wires of the clothing. The fancy roll lifts such fibers to the surface of the clothing.

The surface speed of the fancy must exceed the surface speed of the cylinder in order to function properly. As long as this relationship is maintained, further changes in speed do not seem to have a major effect.

The setting of the fancy roll is the key to its proper use. Chalk a strip on the cylinder, and erase part of it by rotating the fancy roll to measure the distance of linear contact or "bite" on the cylinder clothing.

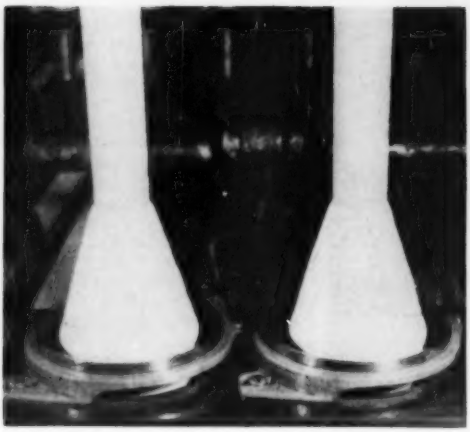
In these tests, three settings were tested: 1, 1¼, and 1⅜ in. With the fancy roll at 1 in., the cylinder loaded in 18 min. and delivered a neppy, uneven sliver. At both 1¼ and 1⅜ in., the roll performed satisfactorily.

It was decided, as a result of observations during the test, that 1⅜ in. might prove too close for practical operations and might cause damage to the clothing with slight maladjustments. Therefore, the 1¼-in. setting was selected.

Evenness Is Improved With a Close Bottom Plate

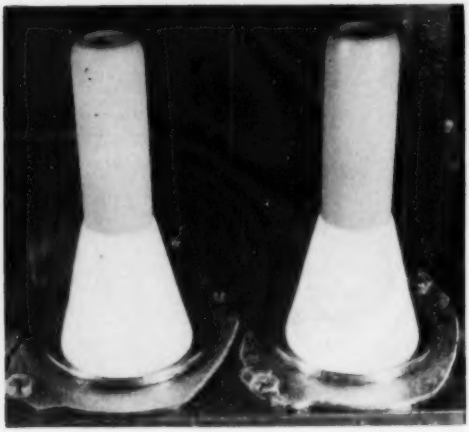
It is a widespread practice on cotton cards to use a 0.022-in. top-plate-to-

(Continued on page 194)



OLD RINGS

Before new rings were installed, the frames were equipped with 2⅛-in. rings of the conventional type. Maximum conventional-ring size would have been 2½ in.



NEW RINGS

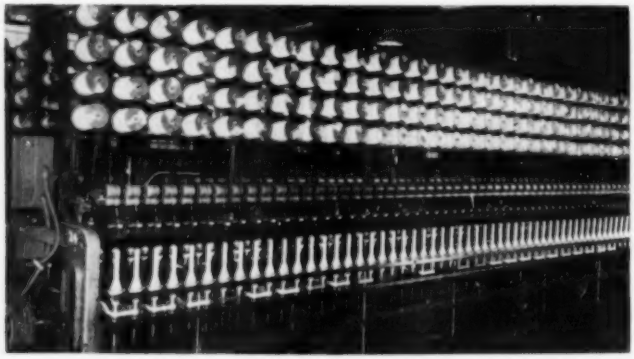
Twisters now have 2¾-in. rings, ¼-in. larger than the largest size of conventional ring that could have been used, because the new rings fit on the rail and not in it.

New Rings Mean New Life For Twisters

HIGHLIGHTS: A sales-yarn mill wanted bigger twister packages, mainly to improve yarn quality. So the mill found new rings that would allow the use of a ⅞-in. larger ring on the same twisters without changing anything else.

The results are more than satisfactory: fewer knots, a cleaner room, increased workloads, cleaner yarn, more even yarn, and decreased costs.

By **JAMES H. KENNEDY,** Southern Editor, TEXTILE WORLD



THIS TWISTER, at Boger & Crawford Spinning Mill, Lincolnton, N. C., puts 8,760 yd. of 40/2 yarn on a bobbin, instead of 4,800 yd. as before. The only change made was in ring size.

KNOTS IN TWO-PLY YARN cause trouble in some of the newer knitting machines, and Boger & Crawford Spinning Mill, Lincolnton, N. C., tried to solve that problem. Their solution lay in increasing twister-package size so that fewer bobbins of yarn had to be tied in to fill a sales cone.

They used conical rings made by Herr Mfg. Co., Buffalo, N. Y. With these rings, the mill went to a ring that was ¼-in. larger than the largest ring that could be used on their 3¾-in.-gauge twisters.

The Whitin Model-B twisters were equipped with 2¼-in. rings that put 4,800 yd. of 40/2 yarn on a bobbin. The new rings measure 2½ in. and put 8,760 yd. of 40/2 on a bobbin (an increase of 82.5%).

A conventional ring of 2¼-in. diameter could have been used on the twisters because the gauge is 3¾ in. This ring would have put 6,700 yd. on the bobbin. But because the Herr rings fit on the rail and not in it, Boger & Crawford was able to use the ¼-in. larger size and step up bobbin yardage to 8,760 yd.

Tension Is More Even

Tension tests at the mill show that tension is no greater on the new rings

(Continued on page 210)

LOOMFIXING TRAINEES MOVE RAPIDLY if they're kept in small groups when they first start. Later, they should be given individual instructions on looms that are weaving different fabrics.

ENDLESS CHECKSTRAPS CAN BE RUN on old looms such as E-models as well as on XD and X-2 looms. The weave-room atmospheric condition is more important than the type of loom.

Are Your WEAVE-ROOM METHODS As Modern As These?

Georgia mill men say—

- **"The Diehl drive is superior to conventional drives"**
- **"The selection of men to be trained as loomfixers is more important than the training methods"**
- **"Endless checkstraps give us better service than any other straps. Endless straps last longer and make pickers, picker sticks, and shuttles last longer"**

Mills Like the Diehl Drive

All the mills that are running looms equipped with Diehl drives like them. They say this:

Mill A—"We have 130 X-2 looms, 50 in. wide, that we're running 164 ppm. on types 128 and 140 sheeting. We check the transmitter gear for wear periodically. The Diehl drives are superior to conventional drives, and our loom speed is constant."

Mill B—"We turn the gears off the pick each 6 mo. The gears are greased each 16 hr. We have 360 looms that run 192 ppm. equipped with Diehl drives, and we spend less time in maintaining them than in maintaining conventional clutches."

Mill C—"We have 164 looms on the Diehl drive that we're running at 164 ppm. We grease the gears each 8 hr. and have not turned any transmitter gears in the 14 mo. that we have had the looms."

Fourteen Mills Train Their Own Loomfixers

Four mills work with the State Vocational Education Program to train their loomfixers. Weavers and other qualified persons, such as smash hands and warp men, attend the classes on their own time. The instructor is usually a weave-room second hand and is paid by the State.

The other 10 mills who reported on loomfixer training train their own loomfixers. The training methods of all the mills is about the same. Trainees are ordinarily placed with another loomfixer or in an overhauling group.

One mill has built a classroom and placed six looms in it. The room is used only for training fixers. An instructor teaches the trainees to take down and reassemble a loom. The learners are taught all the standard loom settings on all the loom motions. They go from the training room to the weave room, where they stay with an experienced loomfixer until they are given a section.

The selection of men to be trained is more important to most of the mills than the methods of training.

These qualifications are desired:

1. The learner should be between 20 and 30 yr. of age.
2. He must be mechanically-minded.
3. He must be a good weaver.
4. He must be congenial and cooperative in spirit.
5. He must have a good work-attendance record.
6. He must be willing to work on any shift.

Only about 20% of those who start the course make good loomfixers.

Three Mills Like Endless Checkstraps

Only five mills reported that they had tried endless checkstraps.

Mill A is still in the experimental

Based on the fall meeting, Textile Operating Executives of Georgia, held at the A. French Textile School, Georgia School of Technology, Atlanta, Ga.

WEAVING-DISCUSSION leader was J. A. Fife, superintendent, Scottdale Mills, Scottdale.

KEY MEN in Georgia TOE this year include: **T. M. Hampton**, Callaway Mills, LaGrange, the new general chairman; **J. A. Fife**, Scottdale Mills, Scottdale, who led the weaving discussion; **Herman A. Dickert** of Georgia Tech, who was re-elected secretary-treasurer; **T. R. Scott**, Martha Mill, Silvertown, the new vice general chairman; **R. W. Lawson**, Chicopee Mfg. Corp., Gainesville, executive-committee member; **George McMillan**, Crystal Springs Bleachery, Chickamauga, elected to the executive committee; and **Charles Bollin**, John P. King Mfg. Co., Augusta, new member of the executive committee.

stage. It's using leather straps and also the multiple rubber straps. The straps are proving satisfactory, but they're harder to keep adjusted than conventional-type straps. The loomfixers must also be trained to use them.

Mill B is running 320 looms on endless checkstraps. The looms are X-2 models that run at 175 ppm. and E-models that run at 165 ppm.

Some of the looms are equipped with multiple rubber straps and others use single-ply leather straps. This mill thinks that the straps are checking the looms and that the checkstrap cost is reduced.

Mill C definitely does not like endless checkstraps. It ran two looms on endless straps for 18 mo. and used all types of checkstraps. The straps required more attention from the loomfixer than conventional-type straps and ran very little longer. The looms used more bunters, binder leathers, and pickers.

Mill D gives six reasons why it doesn't like endless checkstraps:

1. The checkstraps stretched in a few days and then would not check the shuttle.
2. The binders and shuttles wore quickly because the shuttles were not checked.
3. Pickers wore rapidly.
4. The looms did not run good generally because they slammed off and made break-outs. The loomfixers were always busy trying to check the shuttle.
5. Too much time was spent in replacing these straps in comparison with slotted checkstraps.
6. On XP looms, the straps had to be removed because they threw the shuttles out of the warps, slammed off, and also made break-outs.

The mill tried every type of strap, and these straps just wouldn't work for them.

Mill E is testing three types of endless checkstraps—the glued-leather type, the loop type, and the sectional rubberized strap.

The loop-type strap gives the best service and is easy to place on the looms. The pickers, picker sticks, and shuttles last longer when endless straps are used.

Mill E also believes that the general operation of the loom is improved now that they're using endless checkstraps.

[*Editor's note*: We believe that endless checkstraps cannot be run satisfactorily unless the humidity and temperature of a weave room remain constant. If the atmospheric condition varies considerably, it's useless to try to run endless straps.

If the atmospheric condition is uniform throughout the week and loomfixers are properly trained in the use of endless checkstraps, money can be saved on checkstrap costs; and the life of shuttles, pickers, and binder leathers will not be materially affected.]

To Eliminate Jerk-Backs

"On 4x1 looms equipped with dobbies, we completely eliminate jerkbacks by separating the filling with selvage ends," one mill reported.

"We add three tape selvages outside the regular selvages and fasten them to wires connected to three dobby jacks. An eye-screw is screwed into the breastbeam directly in front of the center tape selvage.

"A selvage end is taken from the outside of the selvage, run through the front tape selvage, through the reed (or at the end of the reed), through the eye-screw in the breastbeam, back through the reed, through the middle tape selvage, around the whiproll, and drawn back through the regular selvage so that it will weave into the cloth.

"A second selvage end is broken from the outside of the selvage, run through the back tape selvage, through the reed, through the eye-screw, back through the same tape selvage, and around the whiproll, and is then woven into the cloth.

"The pattern chain is pegged to raise the tape selvages in the same sequence with the shuttle-box changes.

"Plush is also used to prevent jerkbacks. It is fastened to the inside of the box mouth on each box cell. The filling in each box cell clings to the plush and keeps separate from the filling in the other box cells and, consequently, cannot be jerked into the cloth."

A second mill said, "We use a good brand of shuttle fur on both walls of the shuttle and set the binders on the drop-box end of the loom so that the shuttles will not move away from the lay end as a result of vibration of the loom. This method keeps the filling tight and prevents jerk-backs.

"Sometimes we tack a piece of card clothing on the front side of the lay at the end of the race plate. The card clothing is face up, and the ends of filling are kept separate to prevent rolled ends that weave into the cloth as jerk-backs."

The looms of a third mill are equipped with adjustable beam heads. The beam heads are adjusted so that

the selvage on the drop-box end is as close as possible to the shuttle boxes. The filling ends are shorter on idle shuttles, and fewer jerk-backs are made.

Other mills keep the picking motion set and timed properly, keep a good groove in the shuttle front, keep good bristles in the shuttle, keep the shuttle checked close in the drop-box end of the loom, and wrap flannel or slasher-blanket cloth around the mouth of the box cells.

Loom Gauges Are Practical

Fourteen mills were asked if they think that gauges are practical for loomfixers to use when they make loom settings. All 14 of the mills reporting use loom gauges.

Here's the summary: Gauges are used to set batteries, picking motions, center stop motions, take-up rolls, and stop-motion stands and to time harnesses.

The gauges must be correct for the loom model and the type of fabric being woven. Loomfixers must be properly trained in the use of gauge.

Straightedges and reed squares are used to align the reed, set box-back plates, and set lay-end plates.

Who Sets Stafford Thread Cutters?

Stafford thread cutters are kept in better operating condition if they are maintained by the loomfixers on each section. That's the opinion of 12 of the 14 mills that replied to this question.

"If one man is responsible for the upkeep of thread cutters, there's too much chance of the loomfixers passing the buck, and more seconds will be made," states one mill.

One mill thinks that it is helpful to have one man look after Stafford thread cutters when cloth styles are changed from coarse fillings to fine fillings. Coarse yarns will cut grooves in the fiber blades in the thread cutter, and the blades must be replaced when fine fillings are woven. As soon as the style changes are completed and the thread cutters are operating correctly, the thread-cutter man is taken off the job and loomfixers must repair their own cutters.

Another mill believes that if a mill has a sufficient number of looms, a thread-cutter specialist would soon become an expert at this work and would keep the cutters in good mechanical condition.

Redraw Selvages To Eliminate Tight Selvages

Tight selvages on 100% staple-rayon fabrics can often be eliminated

(*Continued on page 190*)

ANKLETS being run as samples are sized on the hourly schedule. Regular production equipment is used for samples.

RED BAGS are used to make the identification of samples easy. The ticket is also overstamped "Sample."

No Extra Dye Run Needed For KNIT-GOODS SAMPLES

▶ Running samples through regular mill processes gives production data on quality, costs, and time. Colored bags identify samples and rush orders.

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

SMALL LOTS are given no special attention at Spalding Knitting Mills, Griffin, Ga. They are run through the regular knitting, dyeing, and finishing processes.

If a special section for samples were used, there would be no assurance that the quality of the samples would be the same as if they were run through on regular equipment. Running samples through the production line also provides information for determining the production cost and time. The samples are sized each hour as usual, and the machines are set for normal operation. If the samples measure up to high quality on their test run, the mill has evidence that the same quality should be maintained on a regular run.

Identified by Colored Bags

The red bags for samples and green bags for rush orders are easily spotted among the white bags used for regular production. These bags can be quickly located for a check of their position and for a prediction of their delivery date.

This colored-bag marking technique has been found by Spalding to be a great improvement over the use of colored tags to mark special lots. Regular tickets are still used, overstamped "Sample" or "Rush," but immediate identification does not depend on them.

Seconds Are Allowed for

Normal allowances for defects are made for samples as well as for rush orders. Seconds are sorted out at final inspection so that only first-quality work is sent to the dye plant. Any overrun on samples or rush orders is placed in the regular stock.

Would you like to spend a day at a small weaving plant to see what they're doing?

Quilling, Weaving, and Cloth-Grading Tips From Belton WEAVING MILL

THIS MILL--

Winds filling to fit cloth structure
Fixes looms from basic loom settings
Shoots doffed cloth straight to grading frame

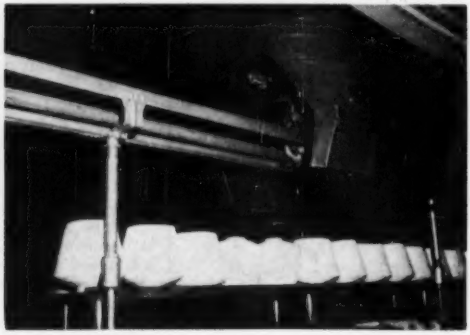
By **J. HARRY HILL,** Plant Superintendent, Belton Weaving Mill

THE USUAL TROUBLE with winding filling is that: a quill that is too large for one style of cloth may be too small for another style, or an excessively long traverse stroke for a certain fabric construction may be too short for another fabric. We've found that one general size of bobbin won't work in our weave room.

For example:

A filling of 450-den. rayon sloughed off badly at the loom. We set our

FILAMENT- AND SPUN-RAYON yarns are wound on this Whitin automatic quiller. Edna Collins is the operator.



A CLEAN QUILLER ROOM is insured as the result of the action of this traveling vacuum cleaner.

picker-stick power and checkstraps and were sure that weaving conditions were right.

The remedy was to put more tension on the ends at the quiller and to set a longer traverse stroke.

For good weaving conditions, we find the correct size and wind that should be used to quill a package of filling for a specific style, record the information, and make all the filling of that construction to a standard.

Sometimes a package of filling will have to be made smaller than usual, but it's easier for an automatic quiller to make more packages of filling than it is for a weaver to start up looms at filling breaks.

We don't put a lot of extra attachments on our looms. We think the manufacturer made our looms right, and we run the looms just as they were made. We set the looms to the manufacturer's specifications.

For instance, we've found that the jerk-back-prevention attachments we have used required more time to keep adjusted than is required to pull out jerk-backs. And even with the attachments we still had jerk-backs.

To make our weave room run—

1. We put a lot of thought into the selection of shuttles. Each shuttle manufacturer makes several types of shuttles for C-4 looms, and we picked what we thought was the right shuttle to weave our fabrics.

2. We head off seconds before they are made. Flare-ups of broken picks will always come; but we try to see that our filling is made right, our filling forks are set right, and our looms are in good condition generally. When broken-pick spots develop, we usually can limit them to two or three days.

3. We fix the loom when a new warp is started. We set the picker-stick stroke, time the pick, fix the shuttles, and the best shuttle fur.

JERK-BACKS are no problem to Carolyn Holliday, who can pull them out and burl the cloth so that the former defect cannot be seen.

4. We get the loomfixers to work together and set loom motions the same way. There's just one right way to set looms, and we try to see that our loomfixers all know that way.

5. We post daily production records for each weaver and each loomfixer to let each person see what every other worker is doing.

6. We use laminated picker sticks on C-4 looms. The new-type laminated stick has "whip" and will break before loom parts are damaged when shuttle boxes hang.

7. To keep seconds down, we check our looms, walk the alleys, inspect the cloth on the looms, and talk to each employee about quality.

Quality in cloth is always more important than quantity. We try to get quality by stressing quality and working for it.

Interest in seconds bogs down when ungraded cloth piles up in the cloth room. Our weave-room cloth doffer takes the cloth directly to the cloth room, where it is graded within minutes. If a roll of cloth is graded as seconds, a report goes immediately to the weave-room shift overseer, who has the loomfixer correct the loom error.

A swatch is taken from each roll of cloth and is dyed and checked for misdraws in the warp and for filling-pattern errors.

Minor defects, such as improperly placed decoration stripes, are mended in the cloth room.

Managing a small weaving plant is an easy job if the employees are trained properly, if the supervisors know their jobs, and if the different departments are in coordination with each other.

THE CONVEYOR BELT takes the wound bobbins from the quiller units to a basket that is transported to the weave room.

TWO AT A TIME — that's how Geraline Martin draws ends through the harness shafts and drop wires.

Griffin Hosiery Mills Reduced MENDERS By Half

▶ The program at Griffin supplements high machine and operator efficiency with measures to prevent defects and careful analysis of defects that do occur.

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

THE SHARP EDGES of the mending tables are covered to prevent snags. Small defects such as pulled threads are corrected here.

NAPPED-CLOTH WRAPPERS carry up to 3 doz. pairs of nylons from station to station. These wrappers are made in the mill.

MENDERS AND DEFECTS have been cut in half at Griffin Hosiery Mills, Griffin, Ga., by an integrated program of efficient operation, defect-prevention techniques, and the analysis of defects.

The first requirement is high operating efficiency. A maintenance program that emphasizes exact machine and needle adjustments and proper lubrication is essential. A good training program that continues to the production line is necessary for operator efficiency. Any practice that allows defects to slip by must be eliminated.

Better To Prevent Than Correct

Griffin has found that a simple preventive device can cut out a lot of defects. All worktables in the mill have been covered with soft fabric or sheet plastic to prevent snags on rough or sharp edges.

Another preventive measure against snags is the use of napped-cloth wrappers for the nylons as they are moved from station to station. These square wrappers are made in the mill and are sufficiently large to hold 3 doz. pairs to a roll. Three pieces of cotton webbing are used to tie the rolls.

The mill tried several types of cloth but found that the soft napped squares gave the best results. The napped cloth remains free from gum and does not require frequent washing.

Defects Traced to Source

Menders result from many causes—pulled threads, dropped stitches, a narrow in the stocking, small holes, uneven stitches, etc.—and at Griffin these causes are traced to their source. Machine adjustment is the answer to many of the defects, and the replacement of worn or defective needles is another. Rough hands and improper handling of the nylons is a cause of damage. And plain carelessness cannot be overlooked.

Griffin Hosiery has adopted the procedure of returning defects to the originating department for replacement. The knitter and the seamer must replace defective work with first-quality work. The supervisors work closely with the inspectors to determine the causes of defects and to make the necessary correction as quickly as possible.

Slight defects are corrected at the mending tables, with pulled threads topping the list of defects mended here. Both the small needle and the automatic device are used by Griffin's menders.

A TEXTILE EQUIPMENT NEWS FEATURE

Bond Dyeing Machine Uses SHOTGUN TECHNIQUE

► **Continuous-dyeing machine has—**

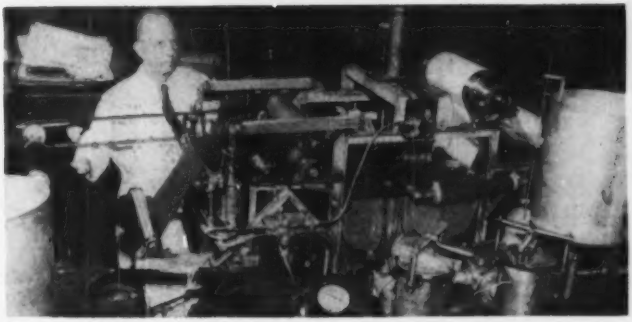
1. Injection plates that direct dye liquor onto the face and back of the fabric simultaneously

2. A filtering system that keeps plate orifices clear, and a method for back-flushing alternate sets of filters during runs

3. Hydraulic lifts to raise upper plates for easy threading and cleaning of the units

4. Steam-chest heating units that will present a smooth, coil-free surface in each unit for easy cleaning

By GEORGE M. MOISSON
Assistant Editor, TEXTILE WORLD



THE NEW BOND DYEING MACHINE applies dye liquor to both sides of the fabric in steady high-pressure streams from jet orifices. Dyeing speed is 20 to 120 yd. per min. The cotton twill being dyed here by Boyce C. Bond, the inventor, gives a satisfactory heavy shade in 0.58 sec. immersion time. The vat-dyeing setup uses five units, as shown below.

SAVINGS IN TIME, dyestuffs, and floor space are claimed for the new dyeing machine shown by Boyce C. Bond, inventor, at a demonstration at Hussong-Walker-Davis Co., Philadelphia, Pa., the manufacturer of the units. Pittsburgh Coke & Chemical Co. is sponsoring the development.

Versatility in the types of dyestuffs used, flexibility for short runs, and better and speedier diffusion of dye solution throughout the fabric are among the more important advantages claimed for the machine.

The machine is capable of operating at any speed between 20 and 120 yd. per min., depending on the type of fabric and class of dyestuff used.

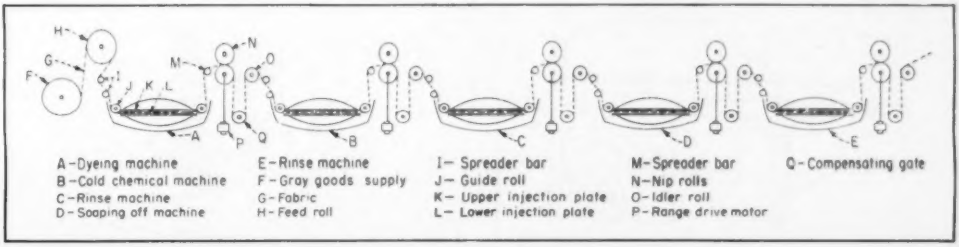
The machine uses plates, between which the fabric passes, beneath the surface of the dyebath. The plates are perforated in a precisely calculated pattern that enables the dye solution to be squirted evenly on both the face and back of the fabric. The streams of dye form two almost continuous sheets of solution that meet within the fabric. The opposing streams of dye liquor are forced throughout every fiber of the fabric. Automatic controls for temperature and rate of flow are provided.

The machine operates with a low volume of dye solution and thus effects substantial savings in dyestuffs and chemicals.

Fabrics that have been dyed on the pilot model of the machine include cotton, wool, rayon, acetate, high-tenacity rayon, nylon, Orlon, and Dacron goods.

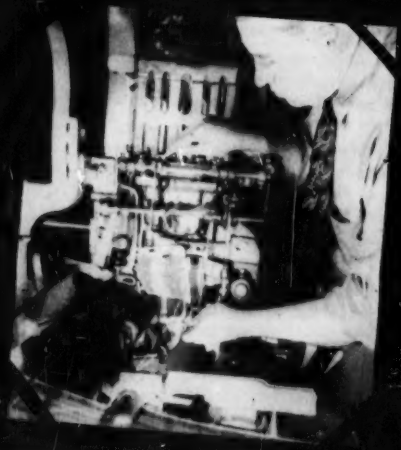
No theory to explain the unusual speed of dyeing has been offered, but an analysis of the process compared with conventional padding, jig, or beck dyeing methods will show that: All conventional methods of dyeing move the cloth more or less at random through a low-concentration dyebath. Dye particles affix themselves to fibers slowly, depending upon the affinity of the various dyes for the fibers, rate of exhaustion of dyestuffs, and equilibrium between dye and fiber. Time, temperature, and dyeing assistants (salt, acid, etc.) are essential to promote leveling and exhaustion.

In the Bond machine the "shotgun technique" directs dye molecules in high concentrations at high speeds into the fabric and directly onto the fibers. The large number of dye particles coming in contact with each unit area of fiber per unit time is evidently the secret of the process. Individual dyestuff affinities have no apparent effect on exhaustion rates; so under these conditions all types of dyes within a class can theoretically be applied evenly.

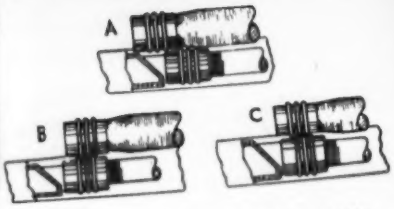


A 5-Min. Check for

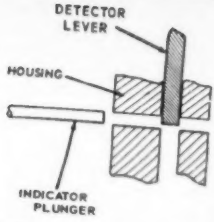
A WORN PICKER on the head end of the loom will cause a weak pick in the drive end and will often result in faulty magazine transfers.



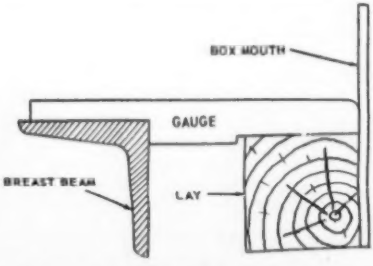
A SUPERVISOR can check a magazine in 5 min. and tell if all the adjustments are accurate enough to insure proper transfers.



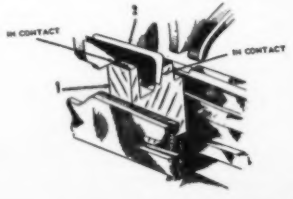
A WARP SMASH will result if the shuttle is boxed as in **A**. **B** will not harm the warp but is bad for filling tension. **C** is the ideal condition.



LARGE PIECES OF FILLING will not be transferred if the detector lever is set to these specifications with the lay at the front-center position.



THE LAY IS POSITIONED to the correct height and also to the correct distance from the reed line to the breastbeam when this gauge is used.



POSITIVE BOBBIN CHANGING cannot be guaranteed unless this gauge is used to position the magazine directly over the correct shuttle position.

W-3 AUTOMATIC MAGAZINES

▶ Don't let your loomfixers work on your automatic stationary magazines unless you're sure that something is wrong. You can be sure what is wrong and can also stop magazine failures if you—

Check specified loom motions first

Check the magazines with gauges

Set and time the magazine to close tolerances

Have your supervisors spot-check magazines

By EUGENE P. SCHREMP, Consulting Editor, TEXTILE WORLD

MAGAZINES FOR THE automatic changing of bobbins on C&K looms have constantly been improved until little of a loomfixer's time is needed to keep them in good operating condition. Magazine adjustments and repairs are few, but they should be made only by competent men who have a thorough knowledge of the magazine.

Operating instructions and settings should be furnished each loomfixer. If poorly trained loomfixers make wholesale magazine adjustments, the quality and efficiency of a weave room will be reduced in a short time. "Fire-department" magazine adjustments made by untrained men will also cause good loomfixers on the same sections to become discouraged and lose interest in their work.

When a loom fails to transfer properly, the weaver should always flag the loom to call the loomfixer. If the loom continues to run after a faulty transfer, shuttles and bobbins may be broken, warp smashes may be made, or the magazine itself may be seriously damaged.

Be Sure It's the Magazine

Magazine adjustments are often needlessly made when some other loom motion is actually causing the magazine failure. Other loom motions may cause bad doffs, broken bobbins and shuttles, filling run-outs, and many other improper transferring conditions that are usually attributed to the magazine. Among the other motions are:

1. Improper shuttle boxing causes more faulty magazine transfers than any other failure. Under ideal transferring conditions, the rings of the bobbin held in the magazine giveways should be one ring back (toward the bobbin butt) of the rings of the bobbin in the shuttle. If the shuttle drives too far in the box, the butt of the bobbin will strike the shuttle and may cause a smash.

The removal or addition of packing behind the drive-end picker will position the shuttle correctly to receive the bobbin. The position of the shuttle to the bobbin in the magazine should be checked periodically.

2. Rebounding shuttles in the drive-end shuttle box will cause the bobbin to enter the shuttle wrong. Excessive picker-stick power from the head end of the loom, too little binder pressure, and an improperly adjusted drive-end shuttle check are the main causes of shuttles rebounding.

3. Shuttles that are not matched as to size and weight will cause erratic shuttle boxing.

4. Too much binder pressure often keeps the shuttle from driving all the way into the shuttle box when the filling on the bobbin is nearly exhausted.

Check the Magazine-to-Loom Settings

After a flagged loom has been started and it has been determined that the magazine and not the loom is causing faulty transfers, check the magazine thoroughly. A complete check requires only a few minutes if a routine checking system is used.

1. Check the lay height with a gauge. If the lay is not set $\frac{3}{8}$ in. below the breastbeam, loosen the bolts in the laysword and raise or lower the lay with the adjusting screws.

2. Check the extreme forward position of the lay with a gauge. Lengthen or shorten the crank connectors at both ends of the loom to align the lay to the breastbeam.

3. Check the height and the front-to-back position of the magazine with the magazine-height gauge.

4. Check the distance from the inside edge of the laysword to the inside edge of the magazine to be sure the distance is $10\frac{3}{16}$ in. This setting is seldom disturbed, but it's always safe to check it.

Only 2 min. is required to check the magazine with the gauges if no adjustments have to be made.

After the magazine is checked with the gauges and adjustments are made, stop the loom with the shuttle in the drive end of the loom and the lay at back center; then place an empty bobbin in the shuttle.

Check the Magazine Settings

Check the magazine for settings:

1. There should be $\frac{1}{64}$- to $\frac{3}{32}$-in. clearance between the indicator finger and the projection on the slide.

2. Turn the lay slowly to front center to make the feeler tip slide on the empty bobbin in the shuttle, and continue the lay movement toward top center until the indicator finger is at its highest position. At this point, the indicator finger should again clear the projection on the slide by at least $\frac{1}{32}$ to $\frac{1}{16}$ in.

3. To control the stroke of the indicator finger, move the adjusting stud in the cam lever away from the cam to increase the stroke and toward the cam to decrease the stroke. Make this adjustment correlate with adjustments to the length of the detector rod and to the length of the plunger rod. The upward and downward stroke of the indicator finger must be the same.

(Continued on page 216)

AT E-Z MILLS

STANDARD WORKLOADS Further High-Quality Knitting

Standard workloads are the main feature of E-Z Mills' system for high-quality knitting. Other features include—

- **Machines are grouped according to yarn and assigned by numbers**
- **The knitting room stays well ahead of the finishing room**
- **Yarn and cloth carriers perform secondary functions**

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

E-Z Mills, Inc., Cartersville, Ga., has a workload system that allows the knitter to devote maximum attention to his primary responsibility of knitting high-quality fabric. The system is based on the number of total ends a knitter can handle rather than on the number of machines.

The standard workloads that have been established for the three types of goods knitted at E-Z Mills are as follows:

80 ends for semiflat knit (7s to 9s yarn, 10 needles per in.).

120 ends for heavyweight rib knit (16s to 20s, 12 cut).

144 ends for lightweight rib knit (26s to 30s, 14 cut).

A four-end leeway is allowed, but the mill sets the load as close to the standard as possible.

The machines used in this work have head sizes of 8, 12, 14, 16, 18, 20, and 22 feeds. So 10 machines with 8-feed heads would give the standard load of 80 ends for flat-knit work; but if other head sizes were used, the total might not be exactly 80 ends.

E-Z Uses These Workloads

Some of the arrangements used by E-Z Mills for semiflat knit are:

a.	10 8-feed (machines)	= 80 (ends)
b.	9 8-feed + 1 12-feed	= 84
c.	8 8-feed + 1 14-feed	= 78
d.	8 8-feed + 1 16-feed	= 80

Two of the setups used for heavyweight rib work are:

e.	8 8-feed machines	= 64 (ends)
	2 12-feed	= 24
	1 14-feed	= 14
	1 16-feed	= 16
	Total	118 ends

f.	8 8-feed (machines)	= 64 (ends)
	3 12-feed	= 36
	1 22-feed	= 22
	Total	122 ends

An example from the lightweight rib workload is:

g.	9 14-feed (machines)	= 126 (ends)
	2 8-feed	= 16
	Total	142 ends

Workloads based on this system allow each knitter to produce approximately the same poundage.

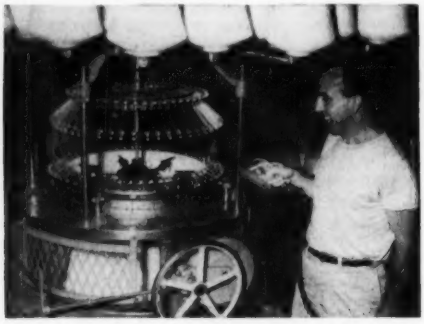
The needle speeds are in proportion to the machine size; for instance, a 10-in. machine runs twice as fast as a 20-in. machine.

A factor in establishing the workload is the number of times a knitter must doff and the number of cones he

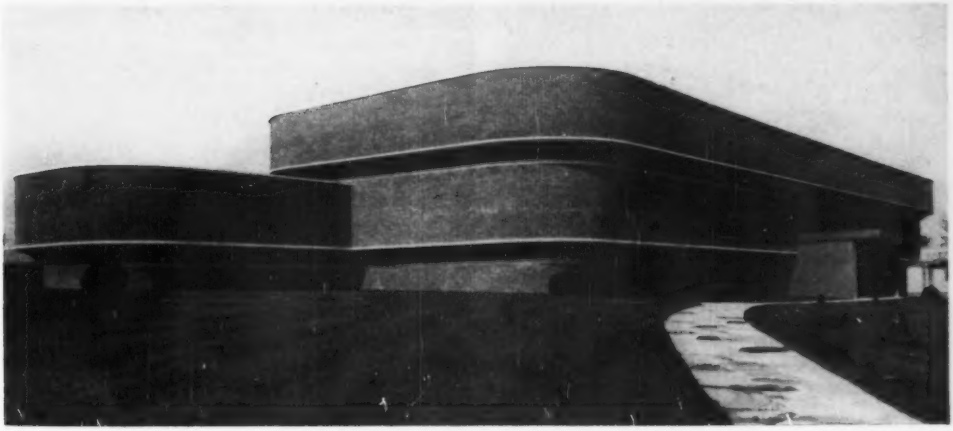
(Continued on page 214)

Here Are Just Two Examples of the Program in Action . . .

A CLOTH CARRIER removes the cloth roll according to a schedule. This practice relieves the knitter of a secondary duty and allows him more time for inspection.



LINT is blown off every 45 min. before the periodic inspection of the cloth. Any lint that is lodged in the machine is spotted before it causes defective knitting.



WALLS ARE SUSPENDED from the roof in Springs' new steel-and-concrete general-office building and laboratory. Windows are inverted at 45° angle.

After a 65-yr. Delay— Springs Builds a GENERAL OFFICE

▶ The first president of Springs Cotton Mills used a bandstand for his office when the first plant was built in 1887. Since then, no regular office building has been provided. The present president's office has been a railroad business car on his own sidetrack. Springs has finally built a general office that's worth the 65-yr. wait. The new building includes—

New research laboratory

Pilot spinning mill

Cotton department

By RICHARD B. PRESSLEY, Assistant Editor, TEXTILE WORLD

IT'S A LONG WAY from the general office of the old-type mill to the modern, efficient office that Springs has built at Fort Mill to serve its Eureka, Springsteen, Fort Mill, Gayle, Lancaster, White, and Kershaw mills and Grace Bleachery.

Springs' building is one of the most modern buildings in any commercial field.

The furniture in the general office was made principally from discarded machine parts from Springs' own plants. The parts include roving-frame ends, shuttles, spindles, picker sticks, top clearers, a spinning frame, a revolving screen, yarn cones, bobbin boxes, a humidifier head, a roving box, roving lifting rolls, clearer covers, spinning scavenger rolls, a condenser screen, loom frames, a loom gear, and many other machine parts.

The entire plant is air conditioned.

Modern instruments are housed in the physical-testing laboratory. Comparative results of yarn and cloth strength between the several Springs plants can be made, since all the instruments are kept in adjustment with each other.

As an example, the operator of the Pressley instrument at each of the Springs plants comes to the control laboratory weekly to see that fiber-testing results are the same on each.

Other instruments are checked and adjusted as carefully as the fiber-testing instrument.

Since all instruments in the several Springs plants show the same readings under similar conditions, the yarns of all the plants are of uniform strength.

The pilot spinning mill insures a quick and accurate analysis of cotton that is graded in the adjoining cotton department.

With the physical-testing laboratory, the pilot spinning mill, and the cotton department together, cotton can be graded by expert technicians, tested for fiber strength, tested for uniformity ratio, carded, spun into yarns, and tested for yarn breaking strength in just a few minutes.

Springs, in the physical building and in the equipment of the building, has brought textile-testing efficiency to the textile industry in an interesting way.

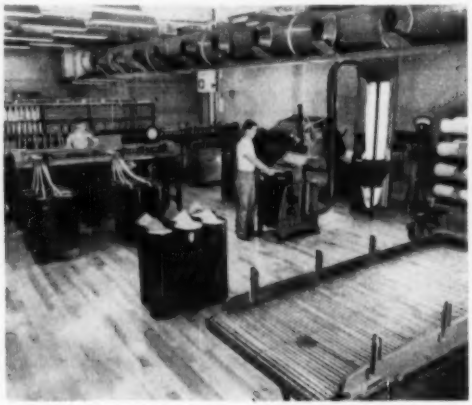
For a look inside Springs' new office and lab turn the page

SHUTTLES AND PICKER STICKS were used to make the unique chair in a secretary's office. A rotary file is formed from a card screen.

ACCURATE RESULTS ARE OBTAINED from tests made in this modern air-conditioned physical-testing laboratory.

YARN STRENGTH is checked daily by the laboratory. Yarn from each plant must be of standard strength.

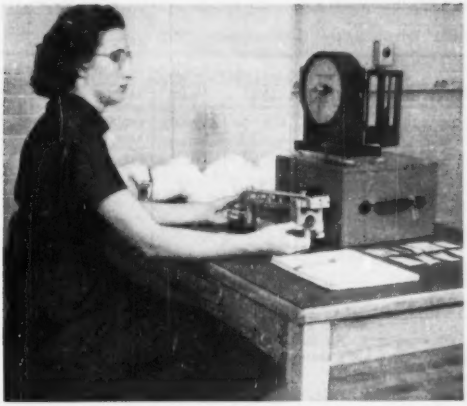
GRADE A— and B are Springs' yarn-appearance averages. Before the present testing program was started, the average was C and D.



THE PILOT SPINNING PLANT is set up to simulate average mechanical conditions in the mills. Five-pound samples of cotton are spun into three yarn numbers.

COTTON WASTE has been reduced since this analyzer was put into use. The machine shows the usable cotton that can be recovered from waste.

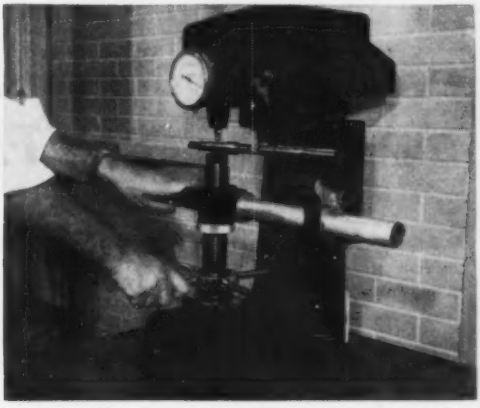
Springs' new office and lab



COTTON-FIBER STRENGTH is tested in random samples taken from cotton mixes at different plants and brought to the general laboratory.

THE UNIFORMITY RATIO and length of cotton fibers are checked from different lots on the Fibrograph. Accurate records are kept.

UNIFORM YARNS from all Springs plants result from constant use of the Uster tester. The adjustment of the machine is a critical point.



THE ROCKWELL HARDNESS TESTER is used to test the hardness of steel spinning rolls. Each roll must come up to Springs' standard.

THE COTTON DEPARTMENT works closely with the physical-testing laboratory in selecting cotton to be bought. Macbeth lights aid the graders.

THE CHEMICAL LABORATORY tests warp size, warp-size compounds, water, and antimildew and antimoth compounds, in addition to raw-cotton contaminants.

Scoresheet to Date on Bangor Mills' Employees' Retirement Plan

	Fiscal	As of June 15 each year						
	1944	1945	1946	1947	1948	1949	1950	1951
Company's Trust Contributions (Annual premiums paid to insurance company)	$31,829	$35,625	$38,320	$14,688	$18,998	$19,666	$30,344	$39,237
Employees' Contributions	None	None	None	None	None	None	None	None
Total employees in the mill	228	237	309	49	142	148	218	256
Total working employees covered by plan	65	80	87	20	27	27	55	67
Total amount life-insurance coverage to date								$742,418
Average-policy life-insurance value								$11,081
Total amount of death benefits paid								$11,460
Number of employees paid severance pay	—	0	0	51	0	0	1	0
Total amount paid to severed employees so far								$22,090

RECORD OF STANDING in the retirement fund is figured each year by the company. An individual report on his or her own position in the fund also is sent annually to each participating employee. Each personalized report gives the amount of benefits to which that employee is entitled. All policies themselves are held by the trustee in New York.

Everyone at Bangor Mills Benefits From RETIREMENT PLAN

▶ Employees and employers at this modern tricot-knitting and dyeing plant are sold on the benefits of its 9-yr.-old employee-retirement plan

▶ Pensions at normal retirement age can run from $20 to $500 a month, depending on three factors

▶ The company foots the entire insurance bill yet does not find the cost excessive

By RICHARD C. SCOTT
New York Editor, TEXTILE WORLD

UP IN THE SLATE COUNTRY in and around Pen Argyl and Bangor, Pa., live non-unionized textile-mill employees who enjoy what C. S. Farleigh, general superintendent of Bangor Mills, Inc., calls "the foremost employee-retirement plan in the country."

Through a system of annual company-bought insurance-policy purchases, for which employees do not have to contribute a penny, combined retirement pensions and life-insurance policies are accumulated for each employee joining the plan after two years of continuous service with the mill. Pensions are set up to run monthly from $20 to $500, depending on (1) the age of the employee when he enters the plan, (2) his length of service before normal retirement, and (3) his basic monthly wage rates over the years.

Details of the Plan

The plan was designed and installed in 1944 by Charles H. Weiss, pension consultant, and is now serviced by American Pension Co. of New York. Policies are underwritten by Occidental Life Insurance Co. of California. In 1944 the mill wished to do something financially rewarding for its employees but couldn't because of war-time wage restrictions. What was evolved was a "tax-sheltered" investment that meets the requirements of Section 165 of the Internal Revenue Code and yet allows the company to put away untaxed money for employees to receive regularly in the future after they reach retirement age.

The program has worked out happily for both employee and employer. The employee has no retirement-plan deduction made on his paycheck during his working years, and he has to pay income tax on the retirement funds only after he starts to receive his monthly checks after retiring at the age of 65. By that time he is in a lower income bracket, and the tax bite doesn't amount to so much. And the retirement checks come along regularly in addition to his federal Social Security benefits.

The plan is advantageous for the mill, in that it usually costs only about $30,000 to $40,000 a year in dollars and cents—earned income that would be taxed heavily anyway if it were not exempted by law because of its use in the retirement plan. In addition, the resultant good will and loyalty engendered among employees by the plan is worth more than any dollars-and-cents price, the company says.

Total company payments into the plan so far, from 1944 through 1951, have been $228,710.

Severance and Death Benefits

Since 1944, a clause in the contract that allows for severance pay at termination of employment with the company before the employee reaches retirement age has been invoked 52 times. Fifty-one of these took place in 1947, when orders for tricot fabrics failed to come through to the mill sufficiently to keep everyone employed. But employees see the advantage now of keeping their policies

How the Plan Works—

1. Who may participate in the plan?

Employees between the ages of 22 and 55½ who have worked continuously for the preceding two years.

2. Who pays the cost of the program?

The entire cost is borne by the company. Funds are contributed annually to buy insurance policies to cover future retirement incomes and death benefits.

3. What is the amount of retirement income guaranteed each employee?

One percent of the employee's basic monthly compensation x total number of full years of employment prior to joining the plan, *plus* 1½% of his future basic monthly compensations x total number of full years of employment between joining the plan and retiring.

The minimum pension is $20 a month and the maximum $500. This amount is in addition to Social Security benefits.

4. How are retirement payments made?

Retirement income (normally at age 65) is paid monthly to the employee as long as he lives.

In the event of death before 120 monthly payments have been made, payments will continue to the beneficiary until a total of 120 monthly payments have been made.

Three retirement-income-payment options are also available.

5. Suppose an employee is put on lower-paying job several years before retiring?

No change in retirement income is made because of compensation changes during the 10 years preceding normal retirement.

6. What happens when an employee in the plan resigns?

A percentage of the cash value of the policy or policies held by the trustee for the benefit of the employee is paid to the retiring employee in the following manner:

Length of Participation in Plan	Percentage of Cash Value Paid
less than 3 yr.	none
3 to 4 yr.	30%
4 to 5 yr.	40%
5 to 6 yr.	50%
6 to 7 yr.	60%
7 to 8 yr.	70%
8 to 9 yr.	80%
9 to 10 yr.	90%
over 10 yr.	100%

If the retiring employee wishes to continue his policy, he may do so by paying the trustee the difference between the full cash value and the percentage to which he is entitled.

7. What happens when an employee is discharged through no fault of his own?

The trustee transfers his policy to him in full.

8. How are death payments figured?

Death benefits for all employees are figured on $1,000 for each $10 per month being earned at retirement, or the 100% cash value of the policy, whichever is greater.

9. Does military service, a layoff, or leave of absence cause an employee to lose his benefits?

In determining eligibility for benefits, employment is considered continuous unless it has been interrupted by resignation or discharge.

10. Can the plan be amended or terminated by the company?

If the company's future earnings should dip too low, yes. But no change may operate to divert any funds already accrued to any employee or held by his or her account.

in force, even if they are temporarily laid off because of business conditions, rather than cashing them in. So only one severance payment has been made since 1947.

Total severance payments for the life of the plan so far have been $22,090.

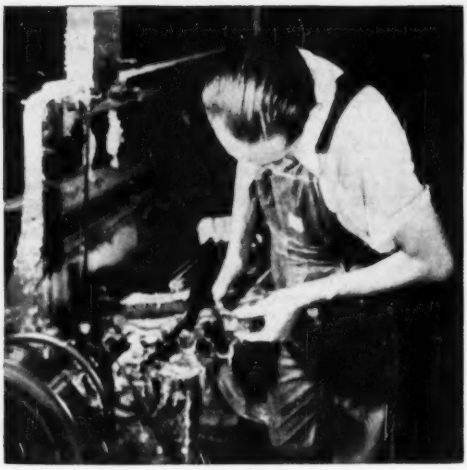
Details on death benefits of the employee policies are given elsewhere in this presentation. So far only one participant in the plan has died. His beneficiary came into $11,460 as a death claim, very close to the $11,081 average death claim that would become available to "Mr. Average Beneficiary" if all 67 of the 1951 participants passed away at one time and if the $742,418 in the present life-insurance kitty were claimed all at once.

Irving Trust Co. of New York is the trustee in charge of all the pension policies issued and of the funds contributed by the company. Members of the pension committee are Albert J. McMasters, office manager at Bangor Mills; Ellisworth M. Davies, finishing-department superintendent; J. Lawrence Davis, attorney; Meyer H. Korn, president of Bangor Mills, Inc.; and Charles H. Weiss, American Pension Co.

How the Pension Plan Operates for Two Typical Employees

	Employee A	Employee B
Born	1904	1921
Employed	1946	1941*
Entered plan	1948	1946†
* Then to military service until 1946		
† Received credit for 5 yr. as an employee		
1948 calculations —		
Total compensation	$1,900	
Basic compensation	$1,428	
Pension value	$39.87	
1951 calculations —		
Total compensation	$2,500	$5,500
Basic compensation	$1,820	$4,477
Company contribution	$352.46	$785.39
Taxable to the employee	$29.39	$53.84
Pension value	$49.09	$236.29
plus Social Security (approx.)	$60.00	$80.00
Minimum death benefit	$4,909	$24,553
At age 65 —		
Total monthly pension	$109.00	$316.29
Percent of 1951 compensation	over 50%	about 69%

CLOGGED OIL HOLES don't stay clogged long because the loomfixer cleans and oils every oil hole when warps are out. A hook is used to clean the treadle roll.



EACH SHAFT AND BEARING that is difficult to reach while a warp is on the loom is checked for wear. If worn, the part is replaced when the loom is empty

5 Steps To Keep Your LOOMS in

A machinery salesman called on the superintendent of a South Carolina cotton mill and became interested in their loom-maintenance program. The salesman told us the story because it sounded like a "natural" to him. We checked with the mill and found that the looms are maintained just as we think they should be. There's nothing new—just good follow-up. Results of the maintenance program in this weave room are—

- **High production for a 3-yr. period**
- **E-model looms in excellent mechanical condition**
- **Few flagged looms because they're already fixed**

By RICHARD B. PRESSLEY, Assistant Editor, TEXTILE WORLD

THIS LOOM-MAINTENANCE PROGRAM keeps several hundred E-model looms in excellent mechanical condition. The program is organized so that each loomfixer and each shift overseer does his part of the checking and maintenance work. It's the follow-up that gets results.

Each loomfixer has a third of his section to maintain. He fixes looms on a whole section, but he maintains the motions on only 42 looms. (A section is 126 looms. Looms are warped by a warp hand.)

Step 1

The Roper Let-Off

The let-offs are completely disassembled and checked once each year. Little repair work has to be done on the let-offs now, but when the maintenance program was first started, each let-off had to be rebuilt.

A let-off that is being checked is removed from the loom and completely torn down. The parts are blown off with an air hose and then cleaned thoroughly. Main shafts are made in the mill machine shop. Bearings for the main shaft are reamed out and Oilite bushings are placed in the reamed surface. The internal gear is rebushed also.

When the let-off is put back together, each machine part is hand-fitted. Worn parts are discarded; but with periodic maintenance, few parts have to be replaced. That's the result of properly fitted machine parts each time the let-off is checked and reconditioned.

After the let-off is replaced on the

PRINCIPAL LOOM MOTIONS, such as the Roper let-off, are torn down, examined, and rebuilt regularly. New parts are added when needed.

THE BATTERY and many other loom motions can be checked when a warp is on the loom. A rebushed disk may be installed to replace the worn one.

Good Condition

loom, it is set to make good cloth. When the loomfixer leaves a loom, he's sure that the let-off will require no attention for a long time.

Let-offs are checked when the warps are in the loom and also on empty looms. In either case, the yearly let-off maintenance program is completed within one month.

Step 2

The Take-Up

The take-up rolls are removed from the looms when they need to be re-covered. It isn't difficult to re-cover them in the loom, but the bearings and journals are usually worn by the time the fillet is damaged.

Each time a take-up roll is sent to the machine shop for a new cover, the shop builds up the journals and refits the bearings.

As part of the yearly check-up of the take-up motion, the loomfixer removes all gears and studs, cleans them, and reassembles the parts with any new ones that are needed. This work is completed within one month.

Step 3

The Transfer Motion

Most transfer-parts wear centers around the bobbin disk. The machine shop reams old disks and rebushes them with Oilite bushings. Now that disks are rebushed, wear and replacement of this part of the transfer motion is small.

All lost motion of parts from the midget feeler to the transfer hammer is removed.

What a Visitor Had To Say

"I've never seen looms in better mechanical condition than in this mill. For instance, the exposed gears on Roper let-offs in most mills are covered with caked lint and oil. At this mill, they're clean and you can tell that oil is getting to the right place.

"The take-up gears are free from foreign substances and are well lubricated.

"There are no pieces of filling in the bobbin cans. The bunches on the exhausted bobbins of filling are just right.

"And the best test—the looms are running."

Step 4

General Checking

Many of the loom motions require only a few days' time to check and repair. This program gives time to check every loom motion each year.

Rocker shafts, camshafts, and crankshafts are not part of yearly check ups but are checked at each warp-out and at each time a worn shaft on a flagged loom indicates that the shaft could be the source of the trouble. A loose brake wheel could not run for more than a week without being found and replaced.

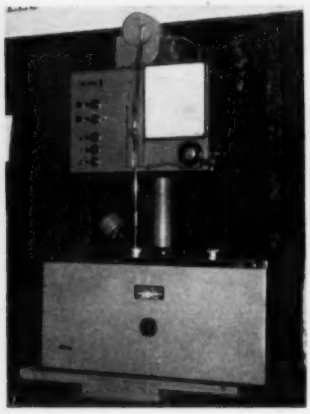
On weekly check-ups, shuttles are polished, harness straps are inspected,

(*Continued on page 256*)

Continuous Processing, Improved Products Spark AATCC CONVENTION EXHIBIT

● About 60 equipment and chemical suppliers showed their wares at the annual convention of the AATCC in Boston.

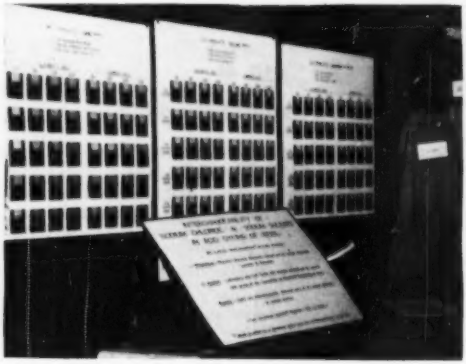
● New developments point to better dyeing, printing, finishing, sizing, desizing, resin treatments, static control, and finished fabric hand.



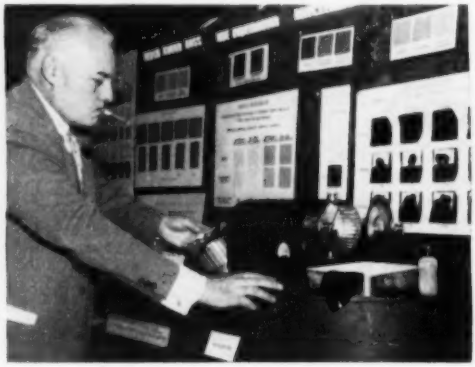
A PRECISION INSTRUMENT for evaluation of detergency, the Determeter, produced by American Conditioning House, Boston, Mass., has been designed under contract with the Q. M. Dept. Heat, mechanical agitation, and time cycle are controllable.

EASE OF HANDLING, more efficient processing control, and improved end products for consumer use were highlighted by exhibitors at the annual convention of the American Association of Textile Chemists and Colorists in Boston last month. Emphasis this year again was on solving dyeing and finishing problems encountered with the newer synthetic fibers.

As with previous shows, TW editors review here only those products that had not been shown before at a similar exhibition.



SODIUM CHLORIDE vs. **SODIUM SULFATE** is the theme of AATCC exhibit. Affected by many variables—such as pH, dye affinity, concentration, liquor ratio, and the economic factor—the choice of salts seems to be up to the dyer. About 4 parts of NaCl is equal to one part of Na_2SO_4 (anhydrous).

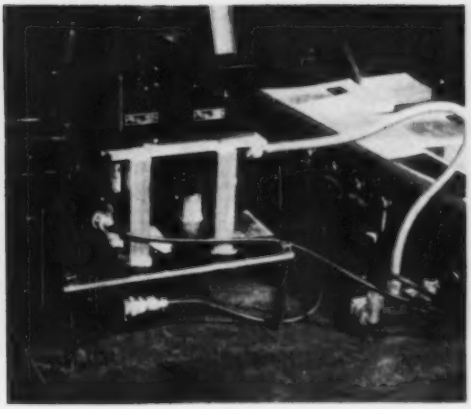


ACCELERATED TESTING of materials for washfastness, wet-and-dry-abrasion qualities, dry-cleaning fastness, edge wear, dye penetration rate, and fulling properties can be performed in the Accelerotor, made by Atlas Electric Devices Co., Chicago, Ill., and featured at the AATCC Research exhibit.

THE IRGALANS—neutral dyeing colors for wool that feature level dyeing and thorough penetration—were introduced by Geigy Co., Inc., New York, N. Y. The range is not complete, but almost half the current shades can be done.

No new equipment is needed to get best results with the new dyes —even existing methods are simplified. Dyeing time is radically reduced; there is no salt in the dyebath; pH is neutral because there is no acid in the bath; and improvements have been noted in fabric strength and resistance to abrasion.

Pastel shades on wool with the Irgalans are said to have high fastness. The entire range exhausts at exactly the same rate of speed, and the products are said to do very well in Vigoureux printing.



COLOREDE, a supersensitive colorimetric instrument for use out in the mill for measuring and controlling colors or any physical changes that can be expressed as a change in light or color, was offered to mill men by Instrument Development Laboratories, Inc., Needham Heights, Mass.

The instrument operates with a single photomultiplier component. The sample and standard are viewed alternately at 30 cycles a second. The extent of difference found is given as an a.c. signal that is amplified and can be shown up on any standard viewing meter. Light or color changes or differences are determined in the unit by means of a system of tri-stimulus values and infinite variations in the three primary colors of the spectrum.

Weatherproof Cabinet For Sunlight Exposure Test

A new glass-covered exposure cabinet made by Atlas Electric Devices Co., Chicago, Ill., is equipped with a self-ventilating, air-filtered atmosphere. The screen is adjustable to regulate distance between samples and glass cover. This device is designed for use in testing lightfastness of colors on fibers and fabrics that do not give reliable Fadeometer tests.

Another device shown by Atlas was their Scorch Tester for chlorine retention, recently approved by AATCC.

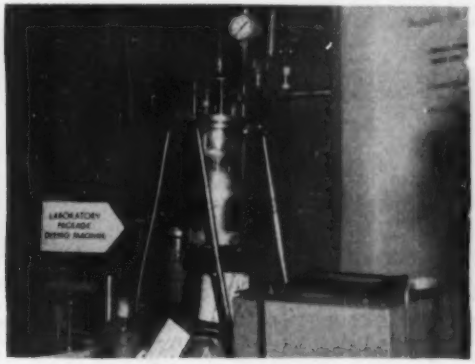
▶ Fabrics containing a slubby thick-and-thin type of Bemberg filament yarn in the filling were on display at the booth of American Bemberg Corp. and North American Rayon Corp., New York, N. Y.

Known as Syntussa rayon yarns (and fabrics), the slubs are imparted to the filament during extrusion from the spinnerette. The slubby yarn is not used as warp yarn because it chafes in weaving.

The yarn is available in deniers of 75, 100, 200, 300, 400, 600, and 800. Direct-dye colors are used. About 25 or 30 direct-dye colors have been found applicable so far.

▶ A new line of accelerators for latex compounding was shown by Alco Oil and Chemical Corp., Philadelphia, Pa. The products—Vulcacure ZB, ZE, and ZM—are available as aqueous dispersions or true solutions.

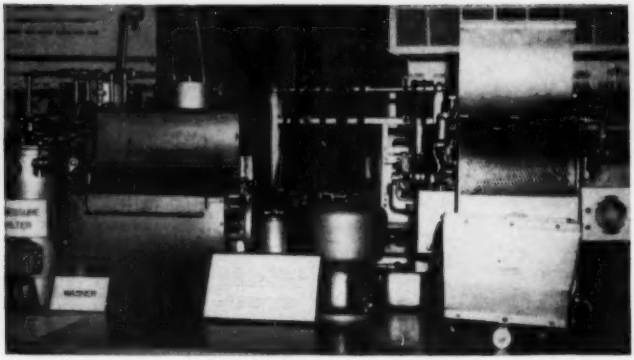
▶ A new cold-water-swelling printing thickener for vat and Rapidogen colors, Kojel, produced by National Starch Products, New York, N. Y., offers a high degree of water absorption and complete solubility and is said to give high color yields.



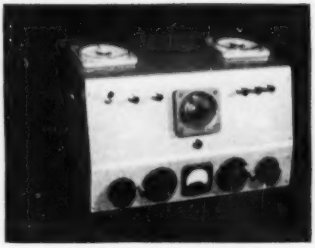
TWO LABORATORY-MODEL DYEING MACHINES were shown by E. I. du Pont de Nemours & Co., Inc., Dyes and Chemicals Div., Wilmington, Del. The small Barotor shown (left) can handle fabrics in widths up to 10 in. and in lengths of 2½ to 15 yd. Operation of the Barotor was described in more detail in TW, Oct., '52, p. 107. The other laboratory unit shown was a pressure-dyeing machine (right) that can accommodate 2-oz. packages of yarn or rawstock. The circulation system of the pressure unit is said to be particularly suitable to laboratory work because everything is submersed.

Continuous Processing, Improved Products Spark AATCC CONVENTION EXHIBIT

Continued

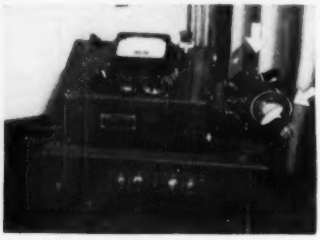


A MINIATURE DRY-CLEANING PLANT was used to attract attention to the AATCC methods for determination of dry-cleaning fastness.



IMPROVED PACIFIC INTEGRATOR is somewhat easier to operate and handle than the model shown at the recent Greenville Show. It is somewhat larger, has toggle switches instead of push buttons, has a d.c. voltmeter, and has more accurate vernier settings. It is made by GE and was shown by Anderson Machine Shop, Inc., Needham Heights, Mass.

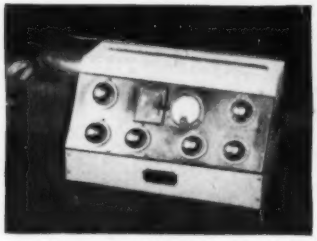
The Pacific integrator automatically integrates test runs made on the Pacific evenness tester. It gives standard deviation, coefficient of variation (correlated with present graphical calculations), mean thickness of material tested, and continuous rather than point-to-point integration. It has automatic timing.



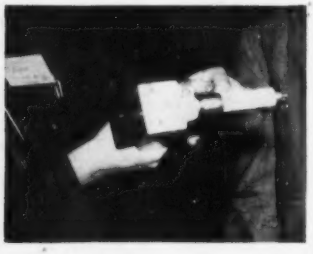
THE PPG-IDL COLOR-EYE with new attachments (arrows) was shown by Instrument Development Laboratories, Inc., Needham Heights, Mass. The new features are:

1. A universal illuminator that gives both a changeable angle of illumination against the sample and a changeable angle of viewing. Directional and lighting effects that are unfavorable are changed by spinning the sample and the viewer.

2. An abridged spectrophotometer attachment that compares sample and standard through a number of narrow-band filters.



TRI-STIMULUS COMPUTER, for use in converting to the I.C.I. coordinate system the brightness ratio of reflectance readings obtained from its Color-Eye tester, was part of the display of Instrument Development Laboratories, Inc., Needham Heights, Mass. The results obtained can be used for color-difference evaluation.



STATIC CHARGES are quantitatively measured with this device, called Statigun, which was shown by Herman H. Sticht Co., New York, N. Y., at the booth of E. F. Drew & Co., Inc., New York, N. Y. The device, which was demonstrated to show the effectiveness of the new Druso 2HV and the new Drustats, was developed in England and can be used to measure static in processing as well as static on fabrics.

Wool Oil Helps Stripping And Is Acid Stable

A new wool oil, EB-1011A, which is claimed to improve card-stripping efficiency and to be acid stable, was presented by Socony-Vacuum Oil Co., Inc., New York, N. Y. The oil is compounded with a new type of emulsifier that causes less grease and gum to be deposited on the cards. Stripping can be done less frequently in some cases, and some mills with vacuum stripping have found that stripping is more efficient when the new oil is used.

Of interest to mills that carbonize in the grease is the fact that a stable emulsion can be made with three parts of 5% sulfuric or hydrochloric acid and one part of EB-1011A.

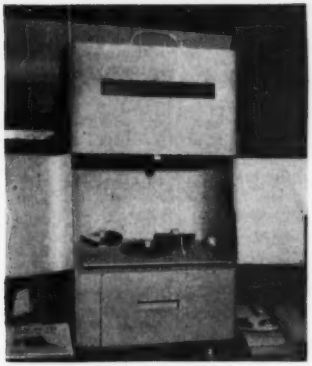
Color-Pigmented Yarns and New Acetate Dyes Shown

The possibilities of special cross-dyeing effects with its color-pigmented yarn, Celaperm, were stressed by Celanese Corp. of America, New York. The company displayed a wide range of novelty effects with blends of acetate, rayon, and Celaperm.

A new range of acetate dyes that do not attach themselves to wool was also presented by Celanese Corp. The use of these new dyestuffs under the proper conditions is said to result in faster colors on wool in blends.

▶ Improved silicone water repellents for imparting a dry, crisp hand were featured by The Cravenette Co., Hoboken, N. J. One of the repellents, called SW-40 Super Long Life in pellet form and SWE-54 in solution form, is a new durable repellent for cottons, synthetics, and blends.

Ease of mixing and application are improved. To SWE-54, water and resins are merely added in one batch. No neutralizing bath is needed after curing. When combined with resins, the water-repellent finish imparts a more effective abrasion resistance to the cloth and improves resistance to nonoily spots and stains.



A NEW COLORIMETER that uses the old principle of spinning vari-colored disks and thereby merging their colors into one—as demonstrated in every schoolroom over the years—was shown by Macbeth Corp., Newburgh, N. Y. Munsell color paper, of standard colors, is cut in disk form to fit on spinning turntables. Combinations of several colors, identifiable by code number, are adjusted by segments on a graduated dial. The combination so obtained may be kept as a record, or transmitted to another laboratory that uses a similar colorimeter. A view-angle-bar reading is also taken to assure reading at the proper angle each time. The instrument, housed in a neat, crinkle-finish metal box, will be available shortly.

New Red and Yellow Added to Acetate Line

Eastone Brilliant Fast Red 2B-GLF, a new bright red acetate dye, was presented by Tennessee Eastman Co., Kingsport, Tenn. Deep shades of bright red with a slight bluish tint and also some excellent self-shade pinks are said to be possible with the new dye. Light- and gasfastness are said to be equal to or better than any red or pink on the market, and washfastness is said to be better.

Another new color, Eastman Fast Yellow 2R-GLF, was also announced. The new yellow is similar to the GLF series but offers slower dyeing characteristics that make it particularly suitable for specialty work in combination shades.

Continuous Desizing Method Eliminates Steam Chamber

Continuous desizing with an enzyme type of desizing agent in a low-cost hot-water method was announced by Wallerstein Co., Inc., 180 Madison Ave., New York 16, N. Y. The hot-water method does away with the need for a steam chamber and a high concentration of enzymes.

Seven or more hot-water-range boxes are used instead of the usual four or five, or the cloth can be run over dry cans before it is washed in a pad-can range.

Hot-Water Method

1. Pad cloth with the enzyme type of desizing agent, concentrated solution. Pick up 100% on weight of goods. Temperature 150 to 160° F. Time: 20 sec.
2. Run through squeeze rolls. Allow a delay of 1 to 5 min.
3. Immerse in hot water, 200 to 205° F., for 20 sec. Squeeze cloth. Repeat.
4. Scour and rinse in the usual way.

Pad-Can Method

1. Pad cloth with ¼ of 1% of the agent, concentrated solution. Pick up 100% on weight of cloth. Temperature 150 to 160° F.
2. Allow cloth to stand in J-box 5 to 20 min.
3. Run over steam cans for 12 sec.
4. Rinse 5 min. in 175° water.
5. Rinse in cold water.

A tenter frame or hot-air type dryer can be used in (3) as a source of high temperature.

▶ Improvement in pigment printing by use of auxiliary clears (synthetic-resin emulsion solutions) or resins with Aridye colors was part of what was offered by the Textile Colors Div., Interchemical Corp., Hawthorne, N. J. The printing of dark pigment shades was featured for cotton, nylon, acetate, rayon, and glass fabrics.

Arigen pastes, concentrated stabilized azoic dyes, were also featured as a recent development. They are a highly concentrated water-in-oil emulsion. The pastes can be mixed with uncolored emulsion at the dyehouse to provide a simple tie-in with conventional dyehouse methods.

▶ Spectrolenes (stabilized azoics), naphthols, fast bases, and fast-color salts were featured by Hilton-Davis Chemical Co. Div., Cincinnati, Ohio. New Spectrolenes for printing include Blue BB Powder, Red KB Powder, Violet B Solution, and Garnet G Solution.

For use in dyeing, Naphthol AS-SG for blacks is being produced. It has excellent subjectivity to cotton. Hiltosol Fast Red B is the salt used in producing this black. Naphthol AS-HB is available for browns.

Versene Price Reduction and Three New Uses Announced

In addition to a price reduction of about 10%, Bersworth Chemical Co., Framingham, Mass., announced three new uses of Versenes:

1. Off-shade dyeing caused by the chelation of foreign metallic ions is said to be prevented if Versene is added to the dyebath in small concentrations.
2. A Versene after-scour of Orlon is said to remove copper and impart a good hand by eliminating a harsh or wiry feel.
3. The addition of Versene to a preparatory fulling compound is said to allow woolen goods to be fulled at lower pH's and therefore prevent much matting and crocking. Hand is said to be softer.

New Twitchell Oil Has Antistatic Qualities

A worsted oil designed to meet the need for positive static control in high-speed processing was presented by Emery Industries, Inc., Cincinnati, Ohio. The new oil, Twitchell 7421, is said to cost no more than low-priced conventional oils that do not have antistatic properties.

Emulsions of the new oil even as concentrated as two parts of oil to three parts of water are low in viscosity and can be applied by any of the usual methods. In one 24-hr. test, no creaming or oil separation was observed in an emulsion of one part oil and nine parts water.

Another feature of Twitchell 7421 is its good ageing quality that is said to offer maximum protection for fabrics that might be stored for a long time before scouring or finishing.

(*Continued on page 248*)

COVERING THE 31st AATCC CONVENTION—along with three other TEXTILE WORLD editors, was George M. Moisson, editor in charge of dyeing, bleaching, and finishing content.

TURN THE PAGE FOR THE PRIZE-WINNING INTERSECTIONAL PAPERS

INTERSECTIONAL CONTEST PAPERS

• Selected papers presented at the AATCC convention and annual meeting have been reviewed in these pages. Only those papers that are most pertinent to the interest of our readers have been abstracted.

WINNER OF THE OLNEY AWARD, Dr. Werner von Bergen, Forstmann Woolen Co., Passaic, N. J., receives the medal from AATCC President C. Norris Rabold while Dr. Walter Hamburger, assistant chairman of the convention committee, looks on.

FIRST-PRIZE WINNER
Rhode Island Section AATCC

IN AN EFFORT to determine how best to prepare Orlon and Dacron fabrics for printing, and to find the best types of dyestuffs and printing methods for fabrics of these types, the Rhode Island Section did these things:

1. Tested all possible types of dyes, binders, heat treatments, steamers, aftertreatments, printing assistants, and conventional printing procedures.
2. Eliminated as possibilities all dyes except vat pigments, leuco esters of vats, and resin-bonded pigments.
3. Followed up application methods

SECOND-PRIZE WINNER
Philadelphia Section AATCC

THE GREAT NUMBER of suggested stripping methods and chemical agents available for test and evaluation were tried on the hydrophobic fibers. Results were compared, and the best method for each fiber was chosen as follows:

Type 41 Orlon—ten percent sodium chlorite, at the boil, adjusted to pH 3 to 4 with nitric acid. This did not affect the fastness test of the redyed samples.

Type 81 Orlon—acidified 5% so-

THIRD-PRIZE WINNER
New York Section AATCC

WITH PIGMENT TAFFETA as a test fabric, experiments were run to determine the effect of various controllable factors on fixation of direct dyes on viscose rayon.

The six significant experiments and the conclusions reached are as follows:

Pretreatment of cloth—in all cases

Other Intersectional-Contest and Convention Papers of

Dacron and Polyacrylics -- How To Print Them

of the chosen dyes as follows:

a. Checked the formation of a solid solution of the dye in the fiber at a temperature below the fiber's softening point.

b. Checked the oxidation of leuco esters of vat dyes at elevated temperatures without chemical assistants.

c. Checked the effect of thickeners.

d. Investigated the optimum time and temperature of heat treatment.

e. Investigated the effect of various treatments on resistance to crocking.

Plant trials followed up the laboratory investigations as follows:

1. Four vat dyestuffs were printed in pigment form in ethyl cellulose emulsion.

2. The same dyes were printed as vat acids in ethyl cellulose emulsion.

3. Leuco esters of the same dyes were printed in ethyl cellulose emulsion.

4. Four resin-bonded pigments were printed in a special emulsion.

On the basis of the above plant trials, the procedures were found practicable.

Considerable variation in results of the trials was found to be caused by insufficient or improper preparation for printing. For Orlon, padding in a solvent emulsion, allowing cloth to stand for 4 to 6 hr., then boiling-off in synthetic detergent, soap, and soda ash, with 0.25% sodium chlorite, 0.25% oxalic acid, and 0.25% nonionic detergent, was found to be the best procedure.

Dacron goods required only a scour at 160° F. with a nonionic detergent and ammonia for 15 min. to provide a good bottom.

[The technical data concerning printing procedures and the evaluations of results in this paper seem to be conclusive and of great value.—Editor]

How To Strip Hydrophobic Fibers

dium chlorite. Reasonably good color removal was obtained with 30 to 50% sodium chloride.

Dacron—most successfully stripped with a two-bath procedure consisting of acid sulfoxylate formaldehyde followed by a treatment with sodium hypochlorite or sodium chlorite. A stable carrier such as monochlorobenzene or benzoic acid increases the efficiency of the strip with sodium hypochlorite and sodium chlorite.

Dynel—sodium chlorite with either nitric acid or a quaternary ammonium compound proved to be the most efficient stripping agent. Swelling agents were effective in stripping both acetate and acid dyes from dynel.

Saran—most effectively stripped by treatment with sodium chlorite in the presence of nitric or benzoic acids.

Acrilan—neutral sodium hypochlorite was an efficient stripping medium for this fiber.

Acetate—treatment with a large volume of soap solution proved to be a simple and effective procedure for stripping the commonly used dispersed acetate colors.

Nylon—a large volume of soap solution was effective on dispersed acetate colors and ordinary acid colors. A two-bath treatment, zinc sulfoxylate formaldehyde followed by sodium chlorite, proved to be the most effective general strip.

X-51—Textone followed by sodium hypochlorite was found to be satisfactory.

How Variables Affect Dye Fixation in Padding

a caustic pretreatment promoted a fuller and brighter shade. Although different causticizing methods produced varying results, all dyeings showed equal if not better color fixation than on untreated cloth.

Temperature of padding—insignificant if the cloth is dried immediately.

Laying-up of cloth before drying—seems to improve washfastness if high temperature (150° F.) is maintained.

Dyestuff classes—seemed to have little effect on general results. Colors from each of the three S.D.C. classes were used. Levelness, shade, and fastness properties equaled beaker dyeings.

Additions to the padding solution—with the exception of diethylethanolamine, had little beneficial effect. Diethylethanolamine improved the solubility of Direct Fast Blue Green BL and seemed to have the effect of speeding the fixation of some colors.

pertinent interest are abstracted on the following pages

SUNOTEX PROCESS AID SAVES $4,000 A YEAR

A mill making fine-quality woolen fabrics was well satisfied with the process aid it was using during the picking operation. But a Sun representative pointed out that Sunotex WO-410 could do an equally good job at a substantial saving. It was decided to run production tests.

These proved so convincing that the company changed to Sunotex WO-410. In the six years that have passed, this process aid has saved about $4,000 yearly. In the meantime several other process oils have been tried out to keep the mill abreast of progress. But none could match the Sun product. Those which performed as well were far more expensive, and those which were cheaper proved inadequate. Recently the plant superintendent said: "Sunotex WO-410 has performed with 100 percent satisfaction during the entire period of use in our plant and has definitely proved to be the least expensive process oil that will do the job properly."

For complete information on Sunotex WO-410 and other Sun process aids for the textile industry, call your nearest Sun office or write SUN OIL COMPANY, Philadelphia 3, Pa., Dept. TW-12.

REPLACES COSTLY AID. The process aid formerly used by this manufacturer of fine-grade woolen fabrics did a satisfactory job. The company switched to Sunotex WO-410, however, after a production test proved it could equal the performance at almost half the price.

MIXES WELL. By adding Sunotex WO-410 to warm water and agitating vigorously, the mill easily obtains a very stable 4:1 emulsion. This means uniformly even application of the Sun process aid and unvarying fiber protection.

SCOURS OUT COMPLETELY. No Sunotex WO-410 remains after scouring. Therefore finished cloth is never "cloudy," never has a disagreeable odor. Also, the scourability of Sunotex assures level dyeing.

SUN INDUSTRIAL PRODUCTS

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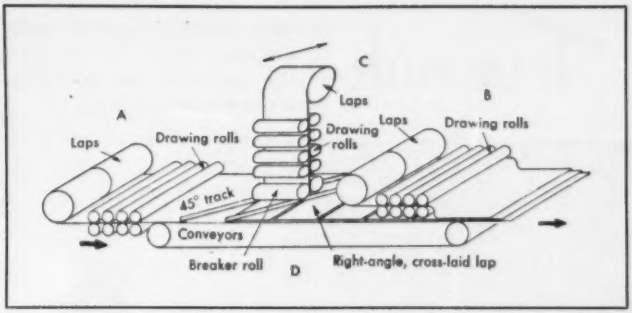
AATCC PAPERS Continued



CROSS-LAYING AND DRAFTING, both thought to be advantages, are accomplished by this arrangement. Fiber packages may be either picker laps or other rolls of fiber. Drafting rolls align the fibers. The web in assemblies *A* and *B* feeds straight along conveyor *D*, while assembly *C* feeds across the web from *A*. Result is that the cross web is sandwiched between two straight webs (*A* and *B*). Random laying is accomplished by the Curlator Corp. Rando-Webber. Fiber feeds from the hopper through an air-cleaning chamber, to a lickerin, onto a condenser, and emerges as a web ready to be bonded.

How Mills Produce Nonwoven Fabrics

By HOWARD E. SHEARER
American Viscose Corp.

In the last 10 yr., the use of bonded-fiber nonwoven fabric has increased from almost nothing to more than 25-million lb. For the next 10 yr., its use probably will double about every 3 yr.

These fabrics are now made in a wide range of physical properties. For example:

1. Neppy cotton may be used to make a fabric for end uses in which the neps are no drawback; rayon may be used for clear fabrics.

2. A liquid bonding agent that covers the fabric all over may be used to obtain a hard finish; thermoplastic fiber may be used to obtain a papery hand; the bonding agent may be applied in longitudinal ribs to improve drape.

3. The amount of bonding agent or the heat and pressure applied in bonding may be varied to obtain different fabric characteristics.

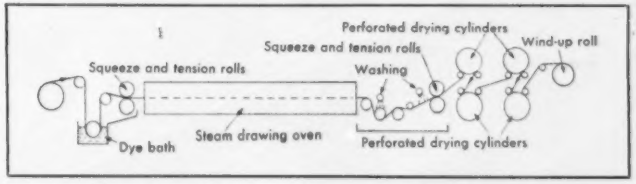
How the Fiber Is Laid

Cotton cards are widely used in tandem to build up the web to be bonded. They are arranged in a line with coiler heads and calender rolls removed; and the web is combed onto a convevor belt that runs under the whole line of cards. Each successive card web is laid on top of the preceding webs. Delivery may be up to about 35 lb. per hr. per card.

Garnetts and woolen cards have some advantage over cotton cards. They lay a web with less parallelization of fibers and produce up to 150 lb. per hr. on a card and up to 300 lb. per hr. on a garnett.

Cross-laying the web from a garnett will give a web 2 to 16 oz. per yd. in weight in 84-in. widths. The cross-laid mat will also have more strength than a straight web.

One special fiber-laying machine is shown in the accompanying sketch.



DYEING AND FINISHING may be done on an arrangement similar to this one.

How the Web Is Dyed

Demand for dyed nonwoven fabric is steadily increasing, and the nature and end use of these fabrics make low-cost dyeing methods practicable. Due consideration, of course, must be given to the selection of compatible bonding agents and dyes.

The accompanying sketch shows a satisfactory arrangement for dyeing, setting, and finishing nonwoven fabric.

Spectrophotometry Is Practical At Mohawk Carpet Mills

By JOHN J. HANLON

To coordinate the activities of and act as a referee between the dyehouse and the laboratory, a spectrophotometer has been put to work at Mohawk Carpet Mills. A large amount of data was compiled and compared with visual color matches, and with this background the program was enlarged to control the dyeing of raw-stock wool batches.

The instrument analyzes the color of an object by measuring light reflected from an opaque object or transmitted through a transparent material, at each wave length in the visible spectrum. The sample is illuminated with spectrum light of a single color, and the light reflected or transmitted by the sample, relative to a standard, is automatically plotted against the wave length of the light that is incident upon the sample. The standard, against which all measurements are made, is a freshly smoked magnesium-oxide surface that gives a high uniform reflectance over the whole of the visible spectrum. The magnesium-oxide surface has been accepted by the International Commission on Illumination as standard.

Spectrophotometric curves alone are not sufficient for determination of color matches, however, and this fact led to an extensive investigation into colorimetry.

Colorimetry is a means of specify-

Teamwork

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Butterworth service is offered too, to help your wet finishing department get the most out of what you now have — to keep equipment at peak efficiency. It may be only a spare part you need — but if you need it in a hurry, you'll get it in a hurry if it is humanly possible.

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ing color in terms of a standard illuminant and in terms of the visual acuity of the normal eye. It is a fact that the appearance of an opaque material is dependent upon three variables: the optical properties of the substance, the physical conditions of illumination under which the sample is observed, and the visual-acuity characteristics of the observer.

An automatic integrator, developed by the General Aniline and Film Corp. in cooperation with Librascope, Inc., is used with the General Electric Recording Spectrophotometer. The automatic integrator makes it possible to measure a sample on the spectrophotometer and at the same time have the integration performed in a continuous manner.

Redox Potential Control Simplifies Cuprous-ion Dyeing

By R. H. BLAKER

In cuprous-ion dyeing of polyacrylonitrile fibers, control of the balance of copper sulfate and reducing agent present in the dyebath is the most important factor.

Five basic principles apply in dyeing acrylic fibers:

1. Copper must be in cuprous form to be effective.
2. Cuprous copper absorbed is proportional to the concentration of cuprous-ions in the dyebath.
3. The amount of cuprous copper absorbed is dependent upon pH.
4. The rate of copper absorption is dependent upon temperature—and is very slow below the boil.
5. The amount of dye absorbed is proportional to the absorbed copper.

Mill experience has shown that cuprous-ion dyeing may be trouble-free if allowance is made for the above factors and if oxidation of the cuprous ion is minimized by exclusion of air from the dyebath and over-reduction of dyestuff is avoided by controlled addition of reducing agents.

Redox potential measurements, when properly used, make it possible for dyers to avoid some of the difficulties mentioned.

Processing Controls Reduce Effluent Waste

By R. H. SOUTHER,
Cone Mills Corp.

With the advent of new redox control instruments, mills can now make better evaluations as to the amount of dye to use to avoid unnecessary waste of dyestuffs. Further studies can be made to determine the amount of chemicals needed to neutralize or coagulate the waste.

A textile plant can thus accomplish three important results: (1) curb pollution of streams by reducing the amount of wastes being emptied into streams, (2) effect savings by using less chemicals for textile processing, and (3) reduce the cost of treating textile waste. In this field are many opportunities to insure efficient and economical methods and a clear, clean-flowing effluent to America's streams.

Many research chemists in the Piedmont Section have been interested in studying the problems inherent in finding the least amount of chemicals to do a certain quality job in processing. Thus they hope to reduce the problem of waste control and the amount of waste effluent to be treated. This committee is still in the formative stage, but it is gratifying to note the increased interest in textile waste problems among textile chemists.

Savings Reported

In this report, results showed big savings in chemical costs in certain vat-dyeing operations using the Cone Mills' redox method for measuring reduction values. Also it was reported that research would be conducted jointly between Southern Dyestuff Corp. and Cone Mills Corp. to reduce the amount of sodium sulfide going into streams.

This improvement was to be accomplished not only by a change in the method of dyeing but also by changes in the manufacture of the dyestuff itself—a joint project that appears unique in cooperative-research efforts.

In less than three weeks, this experiment had been successful. Results indicate that at least one-half of the sulfides can be cut out of the dyeing operation, with a considerable lowering of chlorine demand.

Three Dyeings Made

In this experiment, No. 1 dyeing was made with regular dye and normal amounts of alkali and sodium sulfide, No. 2 dyeing with special dye containing lower amounts of alkali and sodium sulfide, and No. 3 dyeing with special dye containing less alkali and sodium sulfide and with acid sodium phosphate added.

The first two experiments showed that when the normal amounts of sulfide and alkali used for dyeing sulfur black are decreased, there is an increase in depth of shade, a decrease of about one-third in sulfides present in the spent dye liquor, and about a 60% decrease in phenolphthalein alkalinity in the spent dye liquor. By decreasing the amount of detergent in the soaping bath by 50%, along with decreasing the sulfide and alkali content, the mill reduced chlorine demand of the soaping liquor from 400 ppm. to 32 ppm.

The third dyeing was carried out with the same special dye (sulfur black) as in the second dyeing; but with the addition of 20 lb. of acid sodium phosphate, the sulfide content of the spent dye liquor was decreased about 50%, the phenolphthalein alkali content was reduced to zero, and the pH of the spent dye liquor was reduced to 7.5.

These results indicate a savings in dye materials. Less sulfide and alkali waste result from both Dyeing No. 2 with special dye containing less alkali and sulfide, and Dyeing No. 3 with special dye and the addition of acid sodium phosphate to the dyebath.

States Are Aroused Over Stream Pollution

Legislative bodies throughout the country are being pressured for more stringent laws in regard to industral wastes.

A fairly sound law is desired, but its administration must be carefully executed in a practical manner to secure maximum co-operation and benefits and to avoid undue expenditure of large sums of money just to satisfy an arbitrary specification of an impractical board.

Most states, 38 in all, have laws and powers to issue orders. Three states, New Hampshire, New York, and New Jersey, have boards to set up standards of classification. Last year North Carolina enacted a law patterned after that of New York, to provide for stream classificaton and permits.

There are only five states with no laws.

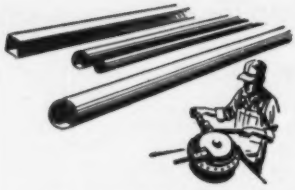
(*Continued on next page*)

Steel Department Store for the TEXTILE INDUSTRY

Here are a few of the many types of steel and related products on hand right now, ready for immediate shipment from your nearby Ryerson plant. Many may be used in place of products that are still hard to get. Check the items you need, and save time by ordering them next time you call Ryerson.

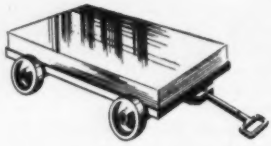
ALLOYS

Tested alloys of known hardenability, both standard and aircraft quality. Complete heat treatment guide with each shipment.



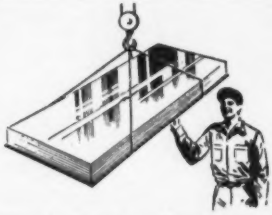
WELDED MECHANICAL TUBING

Hot and cold rolled, rounds and squares in a wide range of sizes. Consider cost. Substitute for seamless tubing.



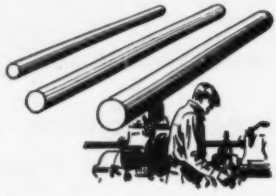
CARBON SHEETS

Both hot and cold rolled coming into better supply, especially cold rolled in the heavier gauges.



STRAIGHT CHROME STAINLESS

No allotment required for these stainless bars, plates and sheets—and they can often replace restricted nickel-bearing types.



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Water, oil or air hardening steel. High in quality; economical in price. Hardening data with every shipment.

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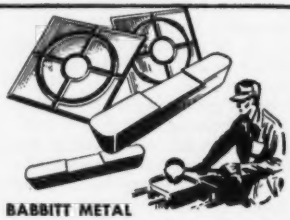
Strong, non-skid Inland 4-Way Safety Plate protects feet against slipping, floors against wear. Easily fabricated.

CHAIN & WIRE ROPE

Rugged, dependable TM chain, iron, steel and alloy qualities, furnished to order. High quality wire rope shipped from large stocks.



BABBITT METAL

Glyco Babbitt, an exclusive Ryerson product, has physicals equal to high tin Babbitts; costs substantially less and is unrestricted.

RYERSON STEEL

Conditioning-- How It Affects Crease Recovery

Intersectional Contest Paper
Piedmont Section AATCC

This paper reconciles the apparently unexplainable paradox often observed in laboratories—that untreated rayon fabrics have better crease recovery properties before resin treatment than immediately after treatment—and studies the effect of conditioning on both treated and untreated fabrics.

Tables of performance data and good reasoning seem to give credence to the following conclusions:

1. Untreated rayons upon long conditioning yield crease recovery angles in the range of resin-treated rayons.

2. Resin-treated rayons exhibit a much more rapid recovery of "crease resistant" properties immediately after treatment than untreated, newly dried rayons do, but the 24-hr. reading is usually greatly exceeded after extended conditioning.

3. A "water blank" should be prepared to compare treated and untreated rayons by padding a piece in water and drying.

4. Since the 24-hr. result is not characteristic of the ultimate and optimum performance of a resin-treated fabric, some way should be sought to achieve a better measure in a shorter period.

5. Subjection of a resin-treated rayon to three rapid and consecutive dry cleanings before the 24-hr. conditioning seems to be a feasible answer to the problem expressed in (4).

6. Other physical tests should be viewed critically with special reference to conditioning considerations to find a more satisfactory test method.

Viscosity in Warp-Size Preparation

Intersectional Contest Paper—Southeastern Section AATCC

Viscosity Testers Used

1. Brabender Amylograph-Viscograph, which automatically measures and records viscosities at increasing and decreasing temperatures.

2. A flow-type viscometer that measures the seconds required for a volume of size to flow through an orifice.

3. The ultra-Viscoson, which measures viscosity electronically.

4. Brookfield Synchro-Lectric viscometer, which measures viscosity by rotating a spindle in the size.

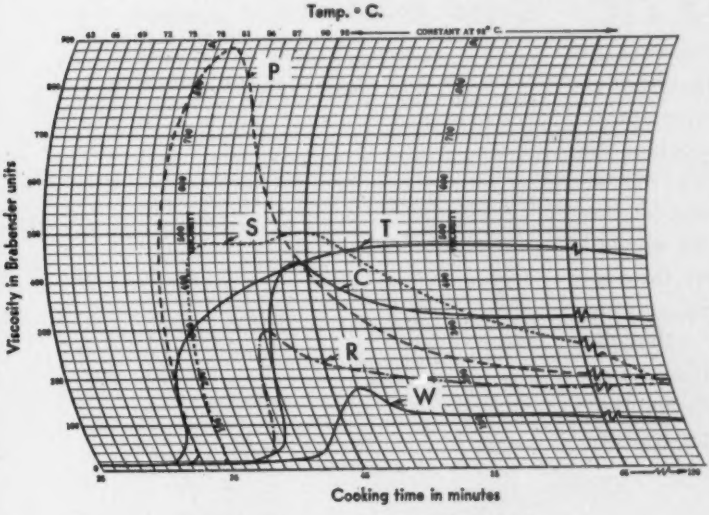
The amount of size picked up by warp yarns in slashing depends in part on how well the size holds its viscosity. The study reported on here was made to find out how different pastes behave during the cooking cycle.

Size materials tested included corn, potato, rice, and wheat starches and sago and tapioca flours.

Behavior of six different starches is shown on the accompanying chart.

The effect of the amount of corn starch used in the size formula is shown by the following table. Viscosity is measured in Brabender units at the level of viscosity stability.

% starch (dry weight)	Brabender units
4.92	110
5.90	200
6.88	300
7.93	360
8.92	455



LEGEND:	CONCENTRATION (%)
P - Potato	5.74
S - Sago	6.46
T - Tapioca	6.70
C - Corn	6.88
R - Rice	6.73
W - Wheat	6.76

VISCOSITY during a range of cooking cycles and for six size materials shows that viscosity levels out at about 45 min. of cooking time and, in most cases, remains practically constant up to 2 hr. of cooking.

Homogenizing Pressure Lowers Viscosity

Another phase of this study was to determine how homogenizing pressure affects viscosity. As can be seen from the following table, as time and pressure increase, temperature increases and viscosity decreases.

Time (min.)	Pressure (psi.)	Temperature (from 188° F.)	Viscosity (Brabender)
4	250	189	—
8	500	189.5	220
12	750	191	—
16	1,000	194	—
20	1,250	194	—
24	1,500	197	—
28	2,000	200	110
32	2,500	206	—

Booth

Originators of STRIP-O-MATIC *

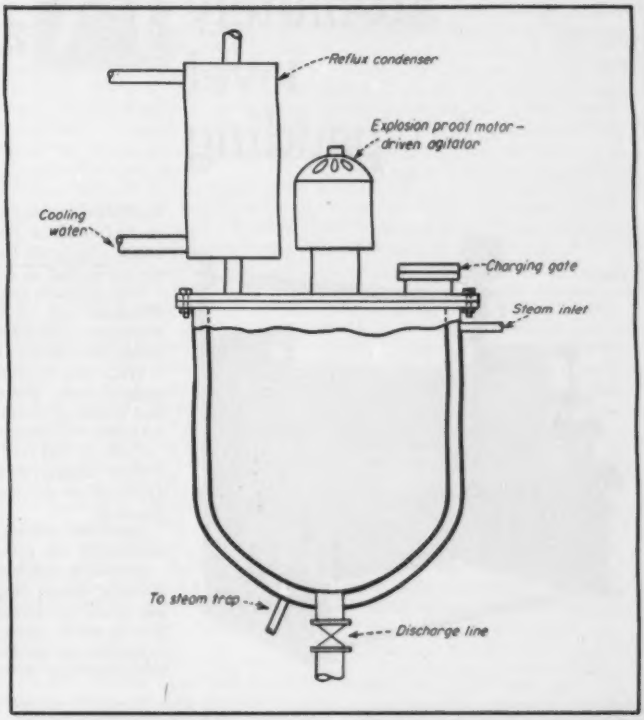
CARD CLOTHING NEWS AND VIEWS

OUR 60TH YEAR OF SERVICE • OUR 60TH YEAR OF SERVICE • OUR 60TH YEAR OF SERVICE •

Modifications of Technique Add Versatility to VINYL COATINGS

- Plastisols may be diluted with organic liquids or made more viscous with gelling agents
- Organisols may be tailored to meet end-use requirements by careful selection of stabilizers and plasticizers
- Resin solutions require proper choice of solvents and careful blending of pigment, fillers, and plasticizers
- Latices must be stable when dispersed. pH must be maintained high enough to prevent coagulation. Homogenizers or colloid mills are best for making oil-in-water emulsions before dilution

By THOMAS J. KERR
Coated-Fabrics Consultant



RESIN SOLUTIONS may best be prepared in a steam-jacketed kettle equipped as shown.

TWO MODIFICATIONS OF plastisols may be made by the addition of small amounts of volatile organic diluents or the addition of gelling agents.

In most instances, the viscosity of the plastisol can be controlled by the selection of the plasticizers. It may be difficult to obtain the proper coating viscosity by plasticizer selection only, and still meet the necessary specifications for the compound, but in such cases, the required viscosity can usually be obtained by the addition of a diluent.

Generally, 3 to 5% of solvent is sufficient, for the effect of these materials on the viscosity of the plastisol is quite pronounced. Either aliphatic or aromatic hydrocarbons, or both, may be used. Xylene and high-flash naphtha are commonly employed. More volatile hydrocarbons are generally avoided, since they evaporate too rapidly and increase fire hazards.

When diluents are required, they are usually added to the dispersion just before the plastisol is to be used. This practice prevents loss by evaporation and makes it possible to establish and maintain the viscosity required.

Plastigels—How To Prepare

Plastigels are prepared from dispersion-type vinyl resins with only minor modifications of the usual methods. The paste dispersion is made up in the usual manner, and then the paste is converted to the gel by addition of the gelling agent.

The gelling agent converts the paste dispersion to a putty-like mass, which retains its form after spreading and may be fused in the normal manner. It exhibits less tendency to sink into the interstices of an open-weave fabric than the original plastisol.

The gelled material is much too stiff to spread on fabric by normal coating methods; but if it is thinned with diluents to coating viscosity and spread on the fabric and the diluents are evaporated, it will regain the characteristics of the gel.

Such materials as aluminum and magnesium soaps, organophilic bentonite, and colloidal silica are used as gelling agents. Some type of dough mixer is desirable for the gelling operation, for the power requirements are considerably more than necessary for the paste dispersion.

The kind and amount of plasticizer used in making the plastisol have a definite effect on the character of the gel. Accordingly, the amount of gelling agent necessary and the kind most suitable for the application must be determined by experimentation. Concentrations ranging from 3 to 15% of the plastisol may be required.

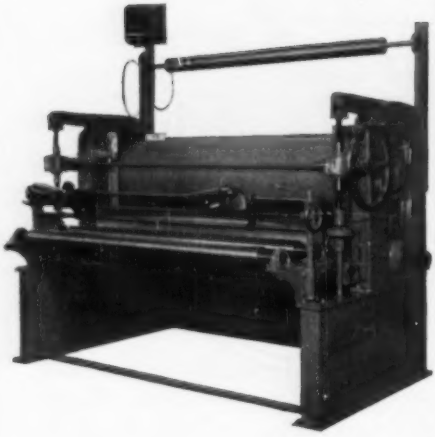
Organisols—Grinding And Dispersing

Compounding organisols is similar to compounding plastisols insofar as the relationship between the compounding ingredients, which actually form the film, are concerned. The same theories of plasticization, stabilization, and pigmentation may be applied.

The dispersion techniques for

Cook absolutely level padding

P&N 2 ROLL PADDER



Sturdy box-type framework, fool-proof pressure control and reliability combine to make this Cook Padder M-5602-2 increasingly popular where absolutely level padding is required. It has particular appeal to dyers of expensive fabrics.

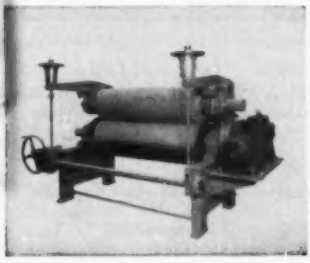
The lever-set pressure control is greatly improved to eliminate any binding and includes a new design roll separator. Furnished in 5, 10, or 15-ton capacity. Furnished any desired width.

With one stainless and one rubber or two rubber covered rolls. Rolls in self-aligning spherical bearings and designed to eliminate deflection. Centrifugally cast stainless roll optional.

Pans, or boxes of stainless steel, plain or jacketted, in various designs to meet your requirements for padding dyestuffs or finishing materials. Pan hinged for easy cleaning.

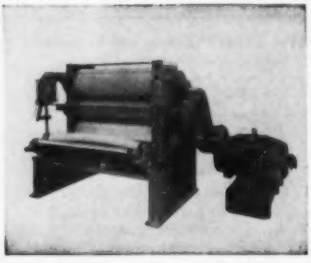
Pressure leveling, expander, let-off and take-up attachments as needed.

All Cook machinery is fabricated in our own shops allowing design flexibility *without* premium cost. Stainless steel fabrication eliminates broken castings and factory-made repair parts. All machines are guaranteed to perform as specified. Your request for information will receive prompt attention.

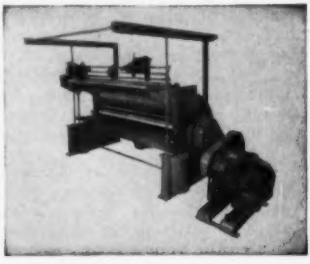


RUGGED STYLE C-M 1833-1 Rugged box-type framework, special bearing mountings and accessibility make this machine appeal especially to plant engineers. This new type bearing mounting saves much expense and lost time when removing rubber rolls for buffing in the plant shop and when replacing them. Furnished with microset, pneumatic or our improved lever-set pressure control in 5, 10, or 15-ton capacity.

Rolls expertly engineered to eliminate deflection. Centrifugally cast stainless steel roll optional. Self-aligning spherical bearings. Pans, or boxes, of stainless steel, plain or jacketted.



COOK 3 Roll Padder M 364-2 Where slippage is a problem this machine provides the solution. Drive is to the center roll which is in fixed position. Pressure is applied to both nips through an ingenious arrangement of pneumatic control. Chain drive is to top roll and necessity of keeping top and bottom rolls exactly same diameter is eliminated. In a short time this padder has proven its value in a number of plants. An automatic mechanical device keeps the rolls separated when not in use. In 5, 10, and 15-ton capacity and in any desired width.



PNEUMATIC STYLE A 1586-1 Box-type frame construction incorporating finest quality materials makes this a popular all round machine. Pneumatic pressure designed with cylinders inserted into frames and includes automatic hold up for top roll. Guiders and guide rolls adjustable vertically. Machine is furnished in 5, 10 or 15-ton capacity. Both rolls rubber covered or one made of stainless steel as shown. Roll bearings are self-aligning spherical roller type with 100% overload rating. Hinged stainless steel pan with or without jacket. Let-off and take-up attachment when required.

COOK-P & N MACHINE CO., INC., 365 Dorchester Ave., Boston 27, Mass.

organisols are different, and volatile esters and ketones (occasionally used as dispersants in addition to the plasticizers) must be considered in much the same light as they were in the plastisols. Plasticizers affect the viscosity characteristics of the organisol about the same way as they do the plastisol; so the choice is of necessity dictated by this effect as well as by the properties desired.

The most common method of making up the organisol employs a ball mill. The ingredients, including the diluents, are charged into the mill and ground for several hours. If there is a tendency for heat to build up, the mill should be cooled. Cooling may be accomplished by spraying the mill with water.

The actual grinding time, depending on the size of the mill, the type of balls or stones, and the composition of the formula, will be from 6 to 24 hr. The dispersion is ready for use when a smooth paste free of agglomerates is developed.

Here's a Typical Formula

As a starting point, this formulation would be suitable for a coating of 3 to 5 oz. per sq. yd. on a sheeting to be used for case covering and similar applications:

Vinylite VYNV-1 (vinyl chloride-vinyl acetate copolymer)	100
Dioctyl phthalate (plasticizer)	55
Barium-cadmium stabilizer	4
Dixie clay (loading)	15
Pigment (color)	5
Apco thinner (hydrocarbon diluent)	65
Methyl isobutyl ketone	5

The methyl isobutyl ketone aids in stabilizing the mixture and assists the plasticizer in solvating the resin in the fusion process.

Viscosity may be adjusted by varying the amount of diluent to obtain the flow required for the particular method of coating employed.

For Upholstery, More Pliability

Comparison of the film-forming ingredients of the following formulation for an upholstery plastisol with the one previously suggested will clarify some of the salient points of compounding.

Geon 121	100
Dioctyl phthalate	35
Santicizer 141	12
Dinonyl sebacate	15
Barytes	15
Color pigment	5
Barium-cadmium stabilizer	5
Paraplex G-60	3

First, it will be noted that the resin in the plastisol is Geon 121, while the resin in the organisol is Vinylite VYNV-1. The Geon 121 is a premium-priced resin, particularly suited for the preparation of paste dispersions. It may give a slightly stronger film, but both resins have high molecular weights and either will give satisfactory physical tests.

In the upholstery compound, three plasticizers are employed where only one is used in the case-covering material. The case cover is supported after it is applied to the box, and there is no need to give it protection against extreme cold by the use of the more expensive sebacate plasticizer. Furniture, however, is apt to be shipped in cold weather; so protection is necessary to avoid expensive replacements as a result of the covering cracking during shipment.

Flame resistance is not required of the case covering. In upholstery fabric, it is not always essential. So many states require flame resistance for material to be used in public places that most manufacturers compound all of their upholstery material to avoid kickbacks.

More stabilizer is used in the upholstery compound, and additional protection is given by incorporating an epoxy compound. Several reasons for this practice are: the coating on the upholstery cloth is much heavier, and longer exposure to heat will be necessary to obtain complete fusion; phosphate plasticizers are generally more difficult to stabilize than dioctyl phthalate, so more stabilizer is necessary when a plasticizer of this type is needed; and the service requirements of upholstery are much more severe than those of the case-covering material.

The differences in the filler are not so critical. Barytes were used in the plastisol because of their low oil adsorption and bulk. The high specific gravity of barytes is not objectionable, since upholstery materials are usually sold against a specified minimum weight of coating per square yard.

Resin Solutions—Solvents And Equipment

Solution coatings are usually based on lower molecular weight resins than those used for plastisols and organisols. The high molecular weight resins are not sufficiently soluble to make their use practical. They are definitely stronger and for this reason are sometimes blended with the more soluble resins. Copolymers containing small proportions of vinyl acetate or vinylidine chloride are more soluble than the straight vinyl chloride polymer of the same molecular weight.

The plasticizers used for plastisols are employed. Smaller amounts are required to produce the same degree of flexibility, since the softening effect of dioctyl phthalate and other plasticizers on resin solutions composed of the lower molecular weight resins is greater.

Stabilization is less critical with solution coatings. The compound is not subjected to any extreme heat in processing, since no fusion is necessary. Lower molecular weight polymers do not age as well as those used for dispersions. Stabilization in this case is primarily directed at increasing the service life of the compound.

Filling and pigmentation are the same as those used for the dispersions. Generally, loadings are smaller because of the lower strength of the resins used.

The resin solutions are made in a jacketed, agitated kettle equipped with a condenser. Heat is required to shorten the time of solution and to permit the use of maximum concentrations of resin in the solution.

Methyl ethyl ketone is the most common solvent. Some toluene or other aromatic hydrocarbon may be used as a diluent, although the use of diluents tends to reduce the percentage of solids obtainable in the solution. Cyclohexanone and other higher molecular weight ketones are used occasionally, since they will give slightly higher solids in the solution or a slower rate of drying if required. There is a definite tendency for the resins to retain small percentages of these higher ketones, and considerable baking may be necessary to remove the residual solvent.

When diluent or higher ketones are used, better solvency will be obtained if the resin is wet out with these materials and then added to the methyl ethyl ketone to complete the process.

Several other solvents might be used— such as propylene oxide, methylene dichloride, ethylene dichloride, etc.—but most of them are objectionable from one point of view or another. Propylene oxide is an excellent solvent, but its low boiling point (95° F.) limits its usefulness. The chlorinated hydrocarbons are good solvents, but the toxic hazards accompanying their use have caused most coaters to avoid them.

The solution is prepared by adding the resin and soluble stabilizer to the heated methyl ethyl ketone in the jacketed kettle. Temperatures of 120 to 140° F. are used in making the solution. The time required will vary from 30 to 120 min., depending on the efficiency of the agitation and the resin-and-solvent blend employed.

Pigments, fillers, and solid stabilizers should be ground in a portion of the plasticizer to insure complete dispersion. After the solution is complete, the pigment, fillers, and the balance of the plasticizer are added and thoroughly blended.

(*Continued on page 204*)

Sensational "Friction Fighter"

Alemite OIL-MIST Lubrication

✻ cut bearing temperatures from 110 degrees to 70 degrees!
lubricated 66 bearings daily with 1½ ounces of oil!
gained ½ hour's production time daily!

Now from Alemite—world leader in lubrication—comes this great friction fighting achievement. Alemite Oil-Mist! The most efficient, continuous, fully automatic system in the field of machinery lubrication.

Alemite Oil-Mist! The System that atomizes oil into *mist*—distributes it through tubing to bearings—bathes *all* bearing surfaces with fresh, clean, cool oil film. A system that simplifies and materially cuts the cost of machinery lubrication. And the lubricator unit has no moving parts.

Oil-Mist uniformly maintains oil film on plain and anti-friction bearings, gears and chains *regardless of variations in load, temperature or speed.* Eliminates the "human element."

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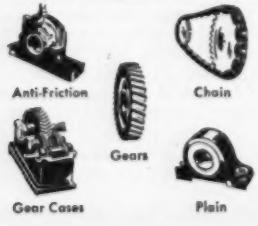
Lubricates All Types of Mechanisms



✻ Here's Proof of Oil-Mist Results Direct from a Field Report!

Before Oil-Mist: It took a full pound of grease and 30 minutes "downtime" daily to lubricate a highly specialized machine at a wire and cable manufacturing plant. 32 of the machine's 66 bearings couldn't even be reached for lubrication, and the average bearing temperature was a hot 110 degrees.

After Oil-Mist: Lubrication of the machine is now fully automatic with a saving of 30 minutes production time daily. Just 1½ oz. of oil lubricates *all* 66 bearings and bearing temperature is now only 70 degrees. Life of bearings is greatly extended!

Alemite OIL-MIST Lubrication

Check All These OIL-MIST Advantages!

- Continuous, uniform lubrication of all bearings.
- Air pressure seals bearings against dirt.
- Reduces oil consumption—up to 90%.
- Prevents product spoilage.
- Eliminates guesswork—each bearing picks up as much Oil-Mist as it needs.
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TEXTILE Equipment NEWS

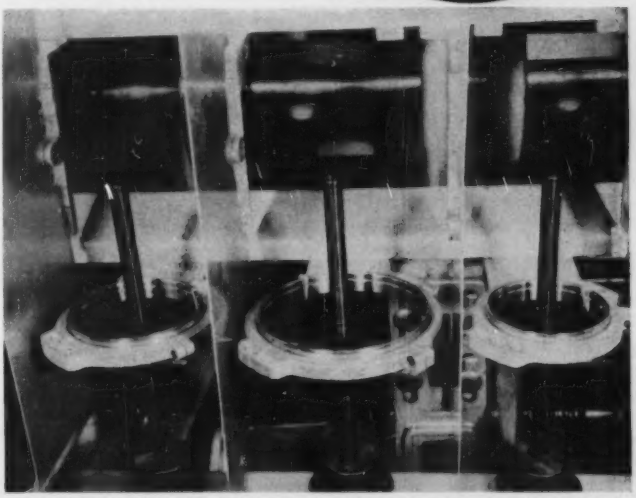
New Twister Has Adjustable Gauge

A new twister with adjustable gauge has been developed by J. A. Bradshaw, 20 Edgewood Dr., Greenville, S. C. The outstanding feature of the new frame, called Flexal, is this almost complete adjustability of gauge—and that includes ring rail, spindle rail, roller beam, thread board, and creel.

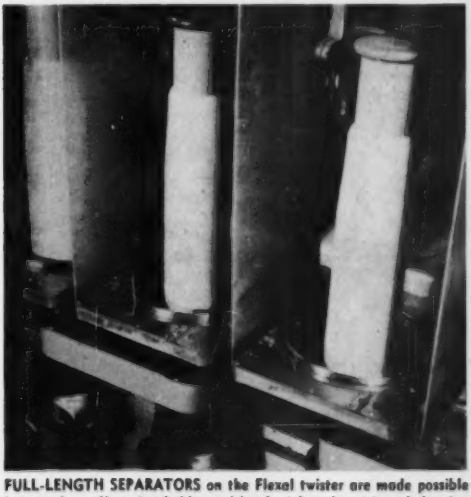
The frame's versatility is made possible by the use of aluminum or aluminum-alloy extrusions made with T-slots, in which the working parts of the twister are mounted. The extrusions eliminate the need for expensive machined parts and make possible the advantage of adjustable gauge without the disadvantage of exorbitant price.

Flexal was originally designed for regauging and modernizing of older twisters, but it is now also available as a new frame. The use of aluminum or similar alloys means less weight, less counterweight, and perhaps more accurate response in the traverse motion of the rail.

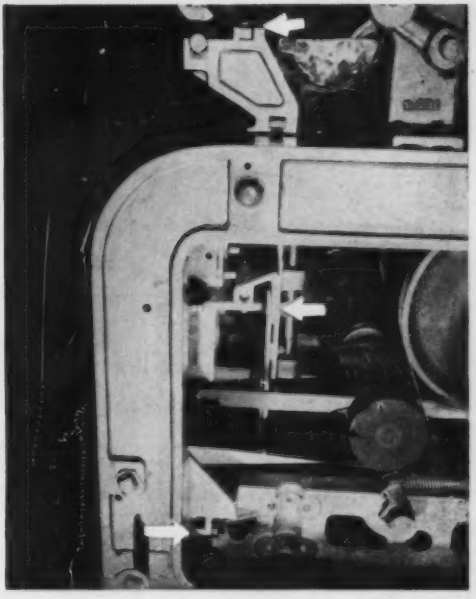
Gauge is adjustable from a minimum of 3 in. to any maximum. Trav-



THE FRAME'S VERSATILITY is illustrated by these three adjacent spindle positions with three widely varying sizes of rings—and these are not the extreme sizes possible.



FULL-LENGTH SEPARATORS on the Flexal twister are made possible by use of an offset ring holder and by the inboard position of the ring rail.



SLOTTED ALUMINUM EXTRUSIONS (see three arrows) hold the spindles, ring holders, rolls, and (above the top of the picture) thread guides and creel pins.

erse is adjustable from 6 in. to 10 in.

The use of an offset ringholder together with a ring rail positioned inboard of the spindles permit full-length and full-width separators to be employed.

Instead of from the conventional samsons, frame support is derived from two separate horizontal brackets clamped to two vertical steel tubes. The feet may be individually adjusted to permit leveling on an uneven floor. Other construction details are said to allow at least a 4-in. saving in frame width when a frame is converted.

Control Rolls Minimize Plucking At Feed Roll-Lickerin Area

New control rolls, for use singly with mote knives in carding cotton and for use in tandem without mote knives in carding synthetic fibers, have been developed for revolving-flat and roller-top cards by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. Application of the new rolls to cards practically eliminates the defects in sliver caused by plucking by the lickerin.

The need for improvement in this area was accentuated by the high interfiber coefficient of synthetic fibers, which makes separation of the individual fibers from the fringe very difficult.

The control roll is set up as follows:

A wire-wound roll is placed directly below the nose of the feed plate and revolves in the same direction as would a bottom feed roll. The teeth in this roll point in the opposite direction to its rotation. The feed plate is then adjusted to 0.035 to 0.050 in. from the lickerin instead of the usual .010 or .012 in. The new control roll is set .007 to .010 in. from the lickerin and is rotated at a surface speed 10 to 15% faster than the surface speed of the feed roll.

With this arrangement, the lickerin takes the fiber from the lap on the upper surface as it is fed through by the feed roll. This action loosens the fiber in the lap and throws it in a soft condition on the wires of the control roll. The action of the lickerin over the surface of this new roll is to completely separate the fibers from each other while they are in a loose condition.

Wider Setting Means Less Fiber Damage

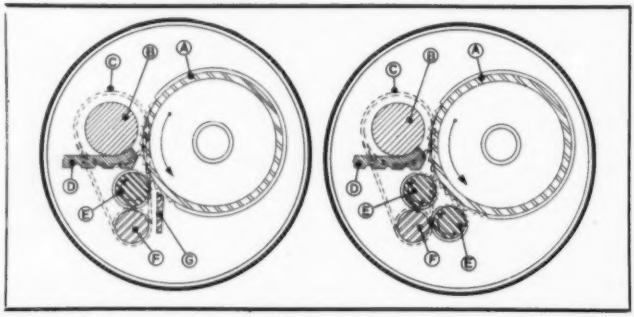
Because of the air spaces between the teeth of the control roll and of the lickerin, there is no tendency for the teeth to damage the fibers while they are being separated. Thus a more nearly uniform feed from the feed plate and a much better distribution of the fibers are obtained as the fibers are thrown on the cylinder by the lickerin. Because of the more complete fiber separation, there is also less tendency for the flats and the cylinder to load up during operations.

In running cotton or similar fibers, it is desirable to use one control roll and one mote knife. When synthetic fibers are run, it is desirable to use two of the control rolls, one immediately following the other. The first roll should be set from .012 to .015 in. and the second roll from .010 to .012 in. from the lickerin.

Fibers up to 4½ in. can be run successfully when these rolls are applied to a card with three sets of workers and strippers.

The application of these rolls to existing cards of Saco-Pettee or Saco-Lowell manufacture is simple. It is necessary to drill one hole in the card side for the drive and two tapped holes in the shelf to apply the driving bracket. The brackets are so arranged to fit on right- or left-hand cards.

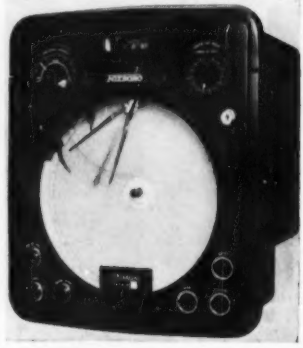
It will in the future also be possible to apply these rolls to other makes of cards.



SINGLE CONTROL ROLL with mote knife (for use with cotton) and double control rolls without mote knife (for use with synthetic fibers) are placed under the nose of the feed plate. Shown diagrammatically are (a) lickerin, (b) feed roll, (c) sprocket on feed roll, (d) feed plate, (e) control rolls, (f) intermediate gear, and (g) mote knife.

Single Instrument Controls Batch-Dyeing Time and Temperature

Complete electronic instrumentation for the control of batch-dyeing time and temperature schedules has been brought out in a single instrument, the Dynalog CycleLog Controller, by The Foxboro Company, 26 Neponset Ave., Foxboro, Mass. The new instrument, incorporating all the automatic features of the Model 40 (pneumatic) CycleLog Controller that was introduced in 1949, employs the Dynalog (electronic) measuring system, designed for speed of response, flexibility and maintenance simplicity.



OFFICE CONTROL of batch-dyeing operations is possible from this new single-instrument panel that can be set up 1,000 ft. away from the dye kettle if so desired.

The electronic measuring system, installed with inexpensive, standard, three-conductor lead wire, permits locating the instrument up to 1,000 ft. away from the dye kettle if necessary. Temperature-range changes are quickly made on location simply by exchanging range coils and the rate-of-rise dial and thus adapting the time-temperature schedule, for example, to the high-pressure dyeing that is required for new synthetic fibers.

The operator can set up an automatic dyeing cycle in less than 10 sec. All control adjustments are made from the front of the instrument case,

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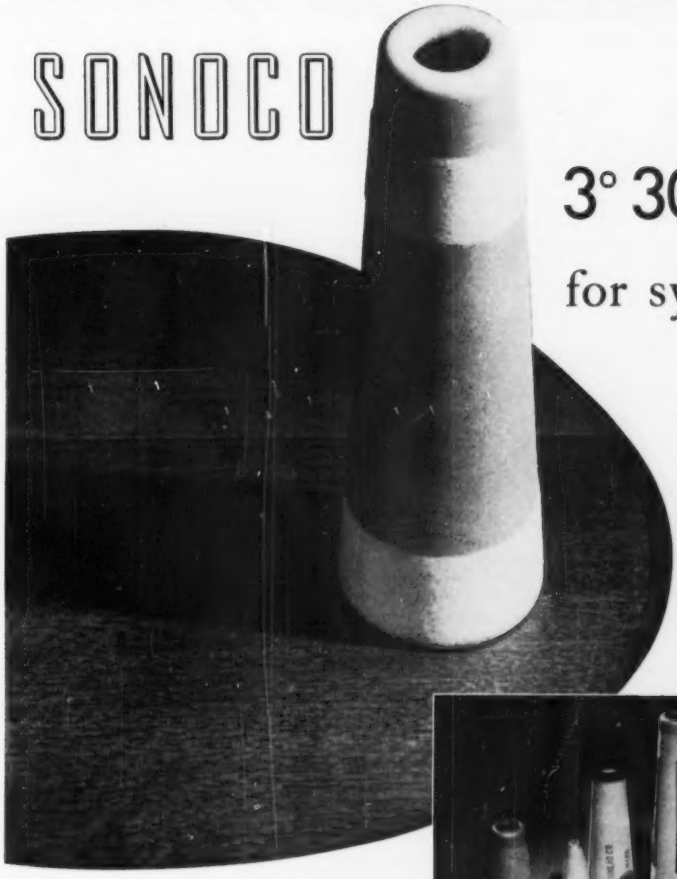
3° 30′ CONES

for synthetic yarns



Especially developed for high speed winding, magazine creeling and knitting machine delivery for rayon, nylon and other filament yarns, and is available in various lengths and weights.

SONOCO 3°30′ cones can be supplied either plain, or with Unitex or Velvet surfaces banded or solid, in a variety of colors and with burnished or plain base.

We are fully equipped to print names or trademarks on any of our cones as shown in the illustration to the right. Sonoco cones are available with notches, scores, perforations, and in many engineered nose or tip designs. Lacquer tipping, dyed base and tip, and also striped base can be furnished on cones as a means of quick identification of various kinds and counts of yarn.

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where the setting knobs, operating buttons, and signal lights are mounted. There is no cam mechanism. By pressing the power button, setting the knobs for (1) base starting temperature, (2) rate-of-temperature rise, (3) dyeing temperature, and (4) dyeing time, and then pressing the "Start" button, one can set a complete dyeing schedule in motion.

Controlled electronically, the water is heated to a base starting temperature and held there for a desired period of time (from 4 to 27 min.) while dye and heat are uniformly distributed. At the end of this period, an amber light on the controller shows that the rate of dye-bath temperature rise is being maintained, from ½ of 1° to 7° per min., depending upon the rate-of-rise setting. When the preset dyeing temperature is reached and signalled by a green light, the controller holds that temperature for the preset dyeing period (up to 3 hr.).

At the completion of the hold time, the controller shuts off the steam, and a red light signals the end of the cycle. However, if additional dyeing time is desired, the operator can merely press the "Overtime" button and thus reopen the steam valve for 4 to 27 min. of extra processing time at the preset dyeing temperature.

Universal Tensile Tester Shows Constant-Elongation Rate

A universal tensile tester designed for fibers or small specimens for recording at a constant rate the following information—force elongation, force time, hysteresis, stress relaxation, multiple breaks, and rupture qualities—is now available from G. F. Bush Associates, Box 175, Princeton, N. J. The tester is especially useful in tests where the resultant graph's horizontal axis can represent either time or elongation.

Design features include instant stop or reversal, no initial load or inertia from instrument parts, no backlash, stainless-steel construction in potential corrosive areas, protection against overloading of strain gauges, adaptability to any type of recording unit, easy calibrating, and presetting of elongation to about 0.001 in. if necessary.

Load ranges are available 0 to 100 gr., 0 to 500 gr., and 0 to 1,000 gr. They are independent of the chart drive. Elongation rates are ¼ to ½ in. per min. The power comes from a 60-cycle plug-in. Over-all dimensions of the tester are 30x18x12 in.

THE HANDLE on this hoist will bend before the chain breaks, if the unit is overloaded, to prevent dropping of load. 1,500- and 3,000-lb. capacities are available.

Ratchet-Lever Hoist Operates in Any Position

The new Model-R coil-chain ratchet-lever hoist, developed by Coffing Hoist Co., Danville, Ill., uses coil instead of roller chain to permit the chain to swing or wrap easily in any direction. When not under load, the chain can be pulled freely through the hoist head for quick adjustment.

The new hoist retains the manufacturer's unique ratchet-and-pawl operating principle. This type of construction eliminates the need for a friction brake. The load is suspended on the ratchet and pawl at all times. It will not slip, nor will the holding mechanism freeze.

The handle operates in any position, which feature solves the problem of working in cramped quarters or where there is little head room. Also, the handle can be operated with either partial or full strokes, depending upon space limitations and desire of the operator. Safety stops prevent spinning of the handle.

The hoist has only a few parts and can be completely disassembled in seconds with only a screwdriver. The handle serves as a "safety valve" in that it will bend under maximum overload conditions and thus give the operator adequate warning to prevent hoist breakage and dropping of the load.

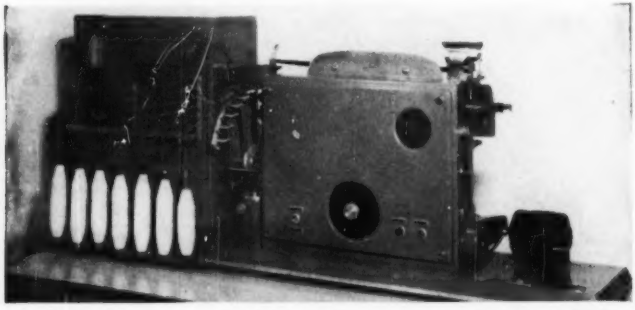
The unit is available in 1,500- and 3,000-lb. capacities.

Yarn Tester Simplifies Finding Coefficient of Variation

The Autodinamograph, an instrument for the simultaneous testing of strength and elongation of cotton, rayon, synthetic, and woolen yarns, has been developed in Italy and is now available from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. The new tester has places for seven bobbins to be handled at a time, 10 tests per bobbin. The unit automatically records strength in grams on a bar-type chart and the average of each bobbin after every 10 samplings.

The Autodinamograph is manufactured by Fabbriche Elettrotecniche Riunite in Milan, Italy. It is constructed with a 20-in. distance between the two clamps, according to the ISO standard yarn-testing setup.

The tester makes it easy to obtain over-all averages of both strength and elongation of yarns for comparative purposes and coefficients of variation.



SEVEN BOBBINS tested on this Italian tester successively give 70 strength and elongation readings on one chart. The chart also gives a good picture of the average bobbin strength.

Uniform Strength

It is a special steel formula, scientific tempering, automatic and electronic controls that make Textile Spring-Beard Needles so outstanding. Length, width, thickness and taper — every dimension is scientifically checked to assure uniformity. Textile Spring-Beard Needles lower production costs — they last longer. Through their glass-smooth surfaces that let the yarn slide around the needle end smoothly, evenly, they'll give you finer fabrics . . . better profits.

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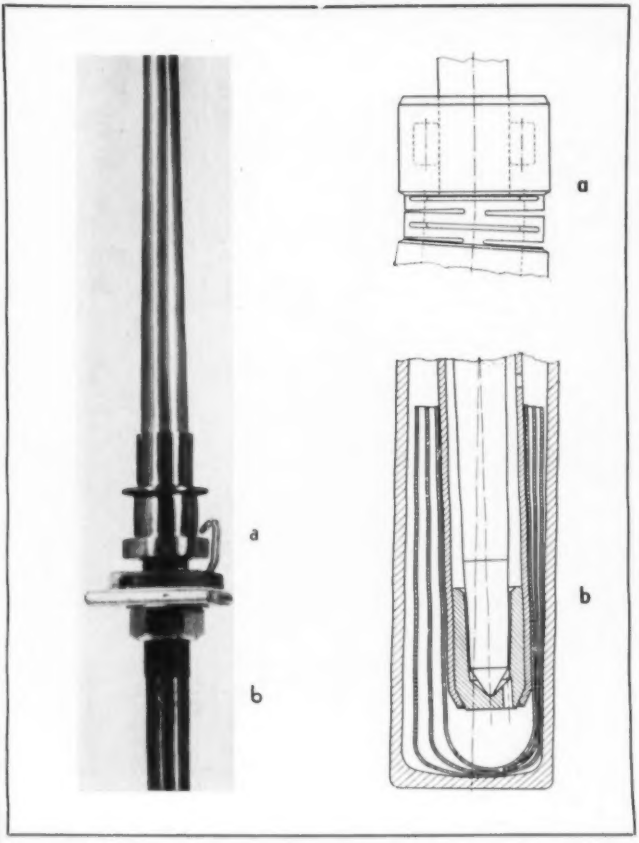


ANY OSCILLATING MOVEMENT is taken up gently at the frictionless universal joint in the whorl of this Swiss-made spinning and twisting spindle.

THE SPINDLE is so constructed that its frictionless universal joint (a) and oil-damping device (b) assure oscillation absorption and constant lubrication.

Spinning-Twisting Spindle Has Smooth-Running Features

A new roller-bearing spindle made in Switzerland by Spindles, Motors & Machines Ltd., said to be a smooth-running spindle that performs with highest efficiency and great economy on either spinning or twister frames, is now available in the U. S. The manufacturer is represented in the U. S. and Canada by Gubelin International Corp., 35 West 53rd St., New York 19, N. Y.

The SMM roller-bearing spindle embodies two unique features: A universal joint and an oil-damping device.

Universal Joint

The universal joint consists of a number of flexing bars and is practically rigid in the direct radial direction but yields gently in the swivelling directions to take up the oscillating movements originating from any lack of bobbin balance. Swiveling is effected without friction.

The bearing tube, roller bearing, and neck-bearing areas are firmly connected to each other so that the roller bearing and bearing tube form an element rigid in itself. The accuracy of alignment of the roller-bearing axis with the shaft is thus assured, and overloading of the roller bearing by undue edge pressure is thereby eliminated.

Dirtying of the oil from friction is excluded. Spindles made heretofore with bearing inserts detachable in the casing have had the peculiarity of being subject to corrosion where parts fit together, it is claimed.

Another advantage of the new universal joint is the ability to bring the rotating part of the spindle exactly into the intended middle position. Therefore, the difference between the external diameter of the bobbin and the internal diameter of the ring can be reduced and the weight of the bobbin increased. Twisting spindles thus no longer need a larger whorl diameter than spinning spindles.

Damping Device

The other outstanding feature of the SMM spindle is a patented damping device, which consists of a number of tubes with specially rounded bottoms. The lubricating oil fills all interstices. The oscillating movements of the upper part are transmitted through the foot of the shaft to the bearing tube and, from there, to the tubes with the oil lying between them.

By this movement, the oil is pressed out from between the tubes, thus damping the oscillating deviation. The damping is very gentle and effective; so that it is equally suitable for dealing with small or large lack of balance.

The foot bearing part has oil always flowing around it. Since the tubes swim in oil, any wear by friction is said to be impossible.

Change of oil and simultaneous cleaning is a simple and fast operation. An easy-to-handle appliance pumps out the old oil and, at the same time, gives a thorough wash with fresh spindle oil. No dismantling of the bolster or bearing insert is necessary.

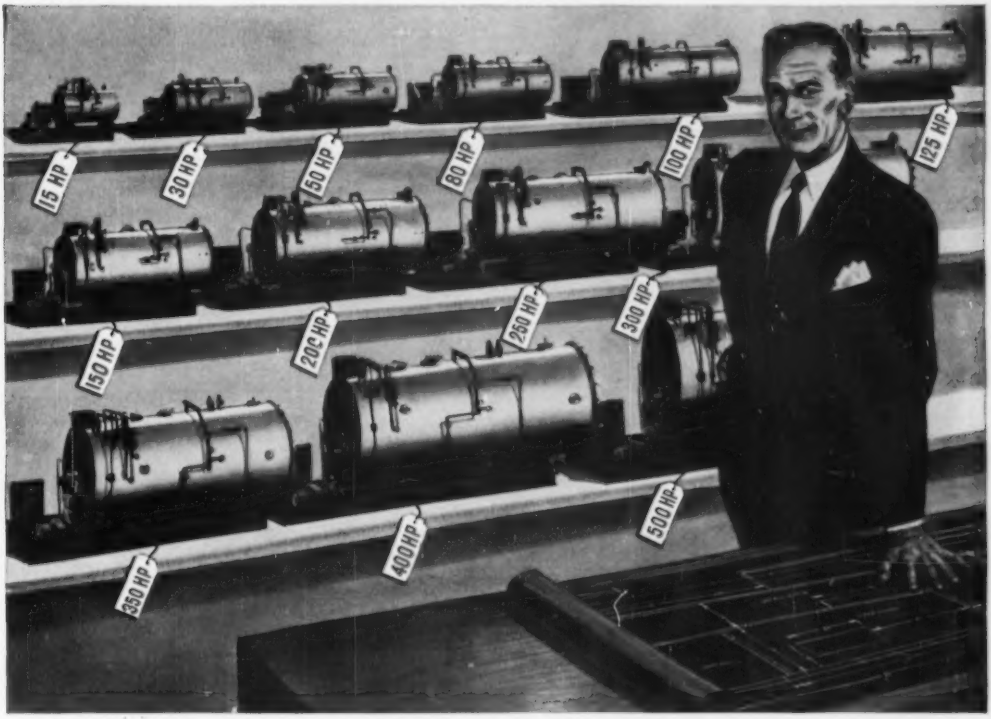
Roving-Bobbin Stripper Uses Air Suction Only

A 12-bobbin roving-stripper machine that uses no knives or drawing-off rolls has been made available to American mills by F. Mannhart Ltd., Baech (Sz.), Switzerland. The bobbin stripper was shown publicly for the first time at this year's Dornbirn Fair.

Bobbins are stripped at high speed by air suction through two metal tubes that lead to a collecting box (on wheels) located between the four legs of the stripper. The stripped waste can thus be returned to the picker hopper or card feed without further handling.

The productive capacity of the machine can be regulated. Under best conditions the stripper is said to outstrip any other method by 10 to 20 times. When run correctly, the machine will keep one operator working full time at keeping the 12 bobbin spindles loaded.

Selecting The Right Boiler Is Most Important...



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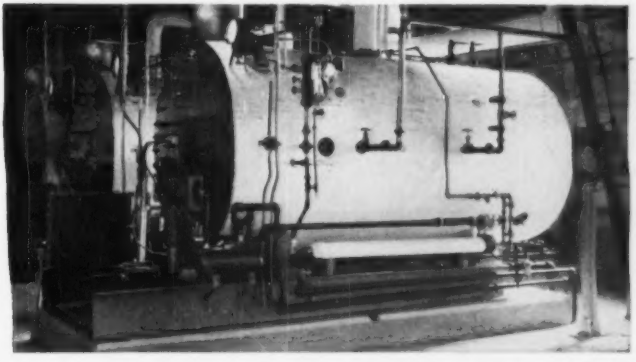

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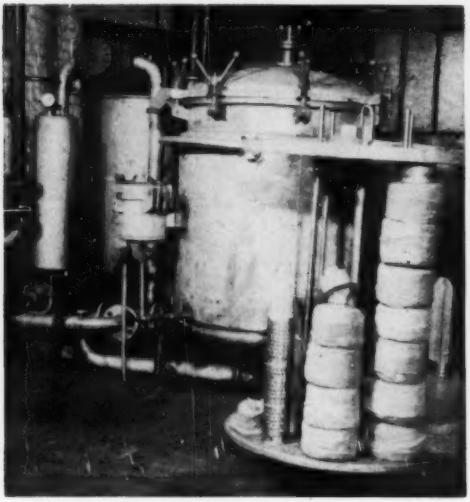
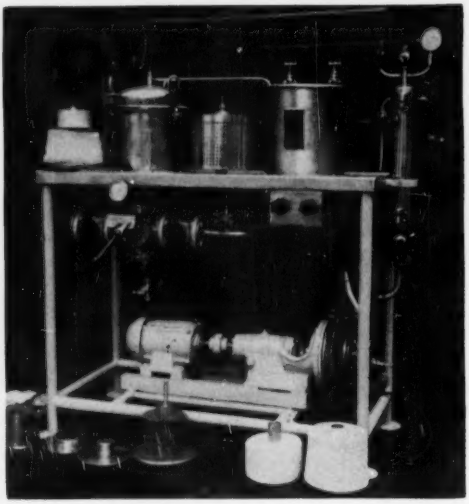


EQUIVALENT TO A 100-LB. UNIT, this new dyeing machine will handle raw stock, yarn on packages, or tops, depending on the dyer's needs.



LABORATORY UNIT has all the essential features of the production machines. A good lab-to-dyehouse match is obtainable with this equipment.

Belgian Dye Machine Uses Controlled Pressure

A dyeing system has been developed commercially in Belgium that (1) controls static pressure from an outside source, independent of the internal temperature; (2) has a sampling kier that can be used at any time without shutting down the complete unit; (3) eliminates difficulties caused by high local temperatures near the stock or yarn by means of a heat-exchanger unit between the circulating pump and the dye kier; and (4) has a special low-pressure circulating pump that prevents much of the channeling and felting caused by high-pressure pumps.

Manufacturer of the system, called the Static-Process Steverlynck, is Groeninghe Ververij, Courtrai, Belgium.

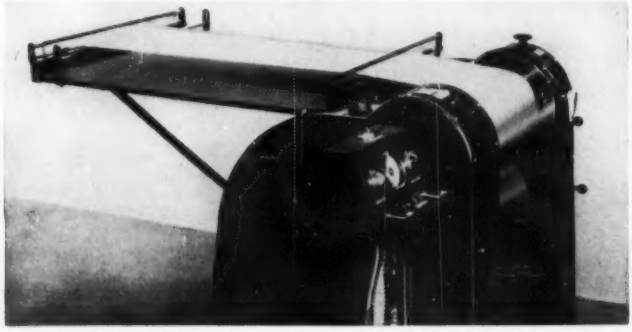
"In a vaporproof system, pressurized independently, not dependent upon vapor pressure, a low-pressure pump can efficiently deliver dye liquor throughout the stock," claims Mr. Baudouin Steverlynck.

Over 40 of the Steverlynck machines are in use in Europe at present. France, Italy, Belgium, Holland, Switzerland, Germany, and Portugal have installations.

In Mr. Steverlynck's dyehouse, Teinturerie de Groeninghe, Courtrai, the units have been in use since 1948. He claims that level dyeing of rayon cakes is an everyday occurrence with his system.

The principles of high-pressure dyeing and the advantages of decreased dyeing time, improved dye affinity, and chemical and dyestuff savings realized by the technique have in theory been known in the United States for some time. The Steverlynck system seems to have most of the difficulties under control.

Electronic Warper Automatically Controls Speed, Beam Density



ONLY THREE MANUAL CONTROLS on this high-speed British warper: (1) the resetting lever of the predetermining revolution counter, (2) an engaging-disengaging lever for use when doffing, and (3) a lever to disengage the pressure rolls from the beam.

An electronically controlled warper that produces "perfect" section beams by the automatic control of yarn tension, speed, and beam density from empty to full beam is now available in the United States from Crowther Ltd., 637 Craig St. West, Montreal, Que., Canada. The warper is manufactured at the company's Brittania Works, Leicester, England.

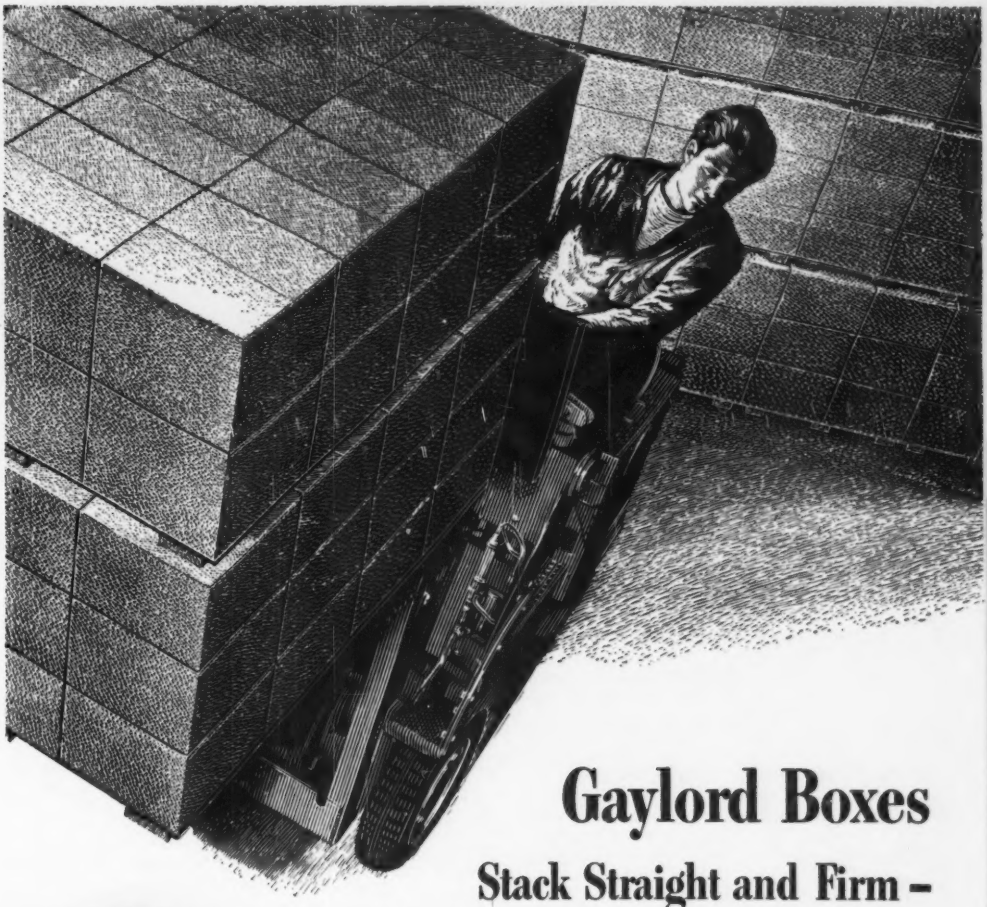
Features of the machine include:

1. Warping speeds up to 800 yd. per min., infinitely variable as desired within a $\pm 1\%$ accuracy at all times

2. Clutchless control that gives a smooth start by means of an electronic current-limiting arrangement

3. A traverse and speed thereof that can be varied by change gears

4. Beam sizes up to $21\frac{1}{2}$ in., with



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5. Control instruments such as a direct-reading tachometer, speed-setting control, reset yardage counter, brake release to facilitate the finding of a broken end, a predetermined beam-revolution counter with reset, indicator lamps, and adjustable pressure roll or rolls on the loom beam for giving the density of beam desired

The warper is designed to work in conjunction with a Crowther or other electric stop-motion creel.

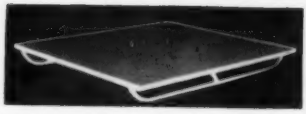
Two Lift Trucks Have New Mechanical Features

Two new fork-lift trucks have been released to industry by Hyster Co., 2902 N. E. Clackamas St., Portland, Ore. They are an 8,000-lb.-capacity truck and a 6,000-lb.-capacity model. Both are gasoline-engine powered and are mounted on pneumatic tires.

The ZA-80 is said to be the first heavy-duty 8,000-lb. industrial truck of its kind that can be operated efficiently indoors as well as out. Features are operator comfort, ease of daily servicing and safety, a shorter over-all length, a longer wheelbase, and improved weight distribution.

The XA-60 model is a 6,000-lb.-capacity version of the ZA-80 that incorporates all the rugged heavy-duty features of the larger truck but has shorter wheelbase, narrower width, and shorter over-all length. Said to be the smallest and heaviest 6,000-lb.-capacity truck ever designed, the XA-60 is distinguished by its compactness, maneuverability, and versatility.

On both trucks the long-life clutch can be completely removed or installed in less than an hour. Large heavy-duty disk-type industrial brakes are designed to eliminate many service and maintenance problems. Both trucks have a powerful industrial engine designed especially for heavy duty.



TUBULAR-STEEL PALLET designed for compact stacking and easy handling has skids or runners that make materials handling easy. The pallet is priced competitively with wooden pallets.

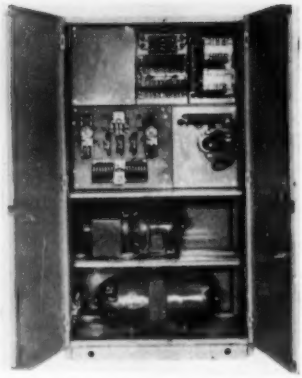
Metal Pallet Withstands Shocks and Jolts Easily

A new tubular-steel all-purpose pallet, lighter than wood construction and priced competitively with wooden pallets, has been placed on the market by Econoweld Co., 1805 Webster St., Dayton, Ohio. Two or more stout tubular skid runners are welded and braced to a rectangular angle-iron frame that encases and protects a tough laminated wood deck.

The sled-like construction permits easy movement over uneven surfaces and obstructions; thus the pallet is adaptable for handling materials in storage racks of any design, in conveyor system, and in all phases of production and transportation. Designed for compact stacking and easy handling, the pallet affords no chance of injury from splinters or projecting fastening devices.

From experience tabulated so far, the company claims that the new product has more than ten times the serviceable life of wood pallets and can sustain much greater shocks and centered loads without damage. Drop tests and systematic abuse showed that the treatment that smashes wood pallets to kindling causes only minor bends in the Econoweld's tubular members, which are easily straightened with ordinary hand tools.

The company intends to produce pallets to meet each customer's specific requirements as to size and capacity.



LINT-TIGHT PRESSURED CABINET takes in only filtered air to keep the slasher-drive motors cool. Slasher operation is controlled from the outside by push buttons and a speed-setting rheostat.

Packaged Multimotor Drive Controls Slasher Tension

A new packaged-type multimotor slasher drive using magnetic amplifier controls is available from Westinghouse Electric Corp., Box 2099, Pittsburgh, Pa.

The new drive is designed to provide high efficiency, reduced maintenance, and better control of yarn tension during all phases of slashing. The complete operation is controlled by push buttons and a speed-setting rheostat. To compensate for shrinkage or stretch, the tension between sections of the slasher can be changed during operation.

Excitation for the d.c. generator and all of the d.c. drive motors is furnished by a static selenium-type rectifier. The magnetic amplifier that regulates the beam motor to give constant winding tension consists of selenium-rectifier stacks and wire-wound reactors.

The motor-generator set, selenium exciter, magnetic amplifier, booster generator, speed rheostat, and associated circuits are enclosed in a single gasketed, lint-tight cabinet that stands approximately 76 in. high, 42 in. wide, and 25 in. deep. Ventilated air is cleaned by fiber-glass filters at the intake, and the control compartment is pressurized to prevent seepage of size dust or lint into the control area.

The motor-generator set, booster set, and all motors have prelubricated, sealed ball bearings to eliminate the possibility of contamination of the lubricant by lint or size dust and to eliminate the necessity of a greasing schedule.

HEAVY-DUTY 8,000-lb. fork lift truck (left) and its 6,000-lb. counterpart (right) can be operated efficiently indoors as well as out. They are gasoline powered.

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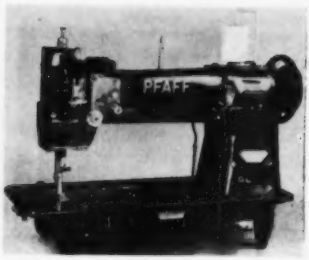
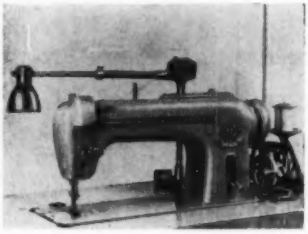
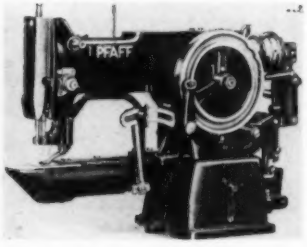


FLAT-BED SEWING MACHINE, designed for high-speed operation with one or two needles, has a compound feed and alternating pressers. Known as Model 145, the machine has a hook so constructed that its extended surface helps build uniform stitches, no matter what type of thread is used. Fittings and attachments to the machine include a synchronized walking binder.



SINGLE-NEEDLE LOCKSTITCH MACHINE has a completely automatic lubricating system. Other features of this Model 434 are (1) a fully enclosed bed-plate with built-in oil pan, (2) a suction pump to remove surplus oil from the head parts, (3) a speed of 5,500 stitches per min., (4) a gear-driven rotary hook, (5) vibrationless running, (6) controlled feeding at high speeds, and (7) hand- or foot-operated forward and reverse stitching.



DOUBLE-LOCKSTITCH BAR-TACKING machine, No. 3334, has two separate cams, one for feeding across and lengthwise, the other for thread-cutting action. Other features include an improved thread-trimming device, a double-spring-activated stopping device, and safety brakes that automatically slow the machine before stopping to save wear on machine parts.

Sewing, Lockstitch, Tacking Machines Introduced

The three industrial sewing machines seen at the left were recently introduced into the United States market by Pfaff Industrial Sewing Machine Corp., 820 Greenwich St., New York, N. Y.

Doffmeter Stops Loom After Preset Yardage Is Reached

The Durant Doffmeter, designed for loom application, is a predetermined-type unit for measuring the yardage of cloth woven. It is manufactured by Durant Mfg. Co., 1931 N. Buffum St., Milwaukee, Wis. It will stop the loom or signal the weaver or fixer when a predetermined setting is reached. It eliminates overruns and assures uniform lengths of cloth.

The Model 3-DM-7-1 is small, compact, and durable; enclosed for protection against dust and moisture; and designed in a modern straight-line motif in attractive tones of silver gray and seal brown. Over-all dimensions are 5¾ in. wide by 2⅛ in. deep by 2⅝ in. high. Weight is 1¼ lb. The cover is metal hinged to provide quick access to the predetermined number wheels, which are easily set by thumb.

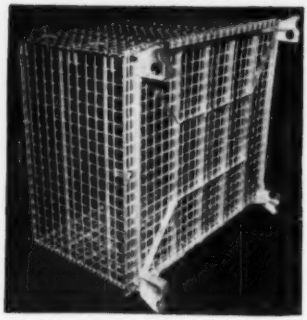
Doffmeters are available for clockwise or counter clockwise rotation and for right- or left-hand drive. Measurement is in yards on three visible wheels, with a hidden fourth wheel measuring one-tenth yards. Switch capacity is 30 amp. at 24 v. The unit can be furnished with a direct-switch connection to carry 15 amp. at 115 v. a. c.

The meter can be driven either by a gear meshing with the gear of the sand roll or intermediate gear, or by a forked coupling. Four holes are provided for convenient mounting to a bracket or plate.

SP Predetermined Counter

In addition to the three-figure Doffmeter, the same counter design is available with five visible figures. It is called the SP Predetermined Counter. Available in either stroke or rotary type, it is applicable for mill operations such as spinning, drawing, pin drafting, warping, beaming, and roving. The predetermined count may be set for any figure up to 99,999.

The five-wheel counters have the same rugged construction features as the three-wheel type and can be supplied for either kind of rotation, for right- or left-hand drive, and for normally open or normally closed circuits.



5,200-LB. FLUID LOADS and even heavier static loads can be handled successfully by the Cargotainer.

Steel Container Designed for Heavy Loads

A new Cargotainer for '53, the Clearview model, which has five advantages as an efficient container, has been announced by Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Pa.

Designed for storage, shipment, or assembly-line operations, the steel container (1) has no center legs so that it can be used with any type of moving equipment, (2) can be loaded safely above the top wire, (3) can be stacked easily, (4) resists shocks because of its special corner plates, and (5) folds to one-fifth its opened size.

The Cargotainer has been successfully tested with 5,200-lb. loads.

The container stacks well and can be used interchangeably with the company's strip-base model.

Armotek Picker Stick Lasts "10 Times Longer"

The Armotek picker stick, which has the elasticity of wood without its weaknesses, has been introduced by Emmons Loom Harness Co., Lawrence, Mass., and Charlotte, N. C. The new sticks are supposed to outlast and outwear conventional one-piece picker sticks five to ten times.

The new picker sticks are expected to make possible a direct saving in money and indirect savings in replacement time, storage space, and handling cost—in the proportion of 5 or 10 to 1—as compared with the usual wooden picker sticks.

To insure that the new stick will not split, even at the hole, the manufacturer has put in full-length reinforcements of densified wood, which is toughened by cross-grain construction. Each stick is custom tapered for a specific picker-stick model.

The selected piece is encased and

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Ammonium Bicarbonate • Sodium Nitrite • Para-dichlorobenzene
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compressed between 10 layers of densified wood, which is made under extreme pressure and impregnated with plastic resins to insure an integral complete finish and waterproofness. The completed construction retains all the quality of the wood, with the added advantages of resistance to moisture and abrasion, while doing away with the tendency to warp and split.

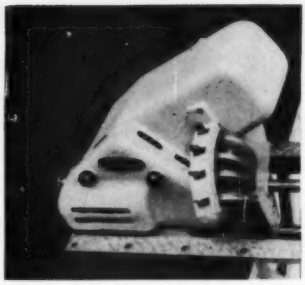
Full production of the Armotek picker stick got under way six weeks ago.

Defect Marker Eliminates Hand Marking of Selvage

The marking of fabric defects can now be done by a fast selvage-marking machine that eliminates the downtime heretofore necessary for the hand sewing of colored yarn at the selvage. The machine, called the FM 1, marks the defects at the selvage without stopping the cloth going over the inspection table. The unit is manufactured by Johannes Menschner of Duelken in the German Rhineland and is available in the U. S. from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

When a defect of any kind is

(*Continued on page 218*)



NO MORE DOWNTIME is now necessary for the marking of fabric defects at the inspection table. This machine marks the defective area at the selvage without the inspector stopping the cloth.

NEW *Dyes* AND *Chemicals*

New Stripper Is Stable, Effective on Acetate, Rayon

A buffered, modified hypochlorous-acid product made by Guardian Chemical Corp., 10-15 43rd Ave., Long Island City, N. Y., called Clorpactin CXW, is one of the most concentrated of several grades of Clorpactin oxidizing compositions. It is a fairly stable white powder, completely soluble in water, and forms solutions that are almost colorless. These solutions are closely buffered to a pH of 7 and therefore contain no free alkali. They exhibit powerful bleaching and stripping effects at fairly low concentrations under normal operating conditions.

One of the most important characteristics of the product is its very slight effect on the tensile strength of fabric. While its solutions will strip a wide range of non-fast colors from such fabrics as acetates, rayons, and cottons rapidly and easily, it does so with a minimum loss of tensile strength in the material being handled, the company claims.

New Softener for Weighted Knit Goods

An anionic softener said to be effective on knit cottons and rayons that are to be heavily weighted with ureas or sugars has been developed by Dexter Chemical Corp., New York, N. Y.

Made of sulfonated synthetic waxes and sulfated alcohols, Atanol BS may be used as a softener for cotton, acetate, viscose, and all synthetics. It does not discolor whites or affect the lightfastness of colors, the makers claim. It is compatible with starches, dextrines, sugars, gums, and urea and is resistant to dilute solutions of acids and alkalis. The pH of a 0.1% solution is 7 to 7.5.

With application by either pad, quetsch, or tube-tex machine, 2 to 3% on the weight of the fabric is satisfactory. For heavily weighted knit goods, a higher percentage is sometimes required.

New Crepe Oil Is Stable in Emulsions

A new oil for crepe soaking of rayon skeins or cakes has been developed by Dexter Chemical Corp., New York 59, N. Y. Dextrol Rayon Crepe Oil #114 is a blend of sulfonated oils with free cocoanut oil. The product forms a very stable emulsion for use in either machine or tub soaking, the makers claim.

New Acetate Red of Low Cost Is Fast

A new, bright red acetate dye, Eastone Brilliant Fast Red 2B-GLF, produced by Tennessee Eastman Co., Kingsport, Tenn., is said to possess a combination of fastness properties and dyeing characteristics unequaled by any acetate red dye now on the market. No staining results during standard tests for sublimation, perspiration, hot pressing (wet or dry), or dry cleaning; and its resistance to wet and dry crocking are excellent, the makers claim.

Acrylic Resin of Low Cost Is Clear, Durable

Acryloid B-82, a new product of Rohm & Haas Co., 235 S. 8th St., Philadelphia, Pa., is a water-white solid polymer of an acrylic-type ester. The resin possesses excellent clarity and resistance to chemicals, is durable, and has low pigment reactivity, the makers claim. The product does not have a sharp melting point but softens instead in the range 70 to 80° C. and flows at 140 to 155° C. Acryloid B-82 is also available as a 40% solution in toluol, in which form it has a viscosity of 400-700 cps.

New Special Dyes Ready for Trial

For Dacron and Orlon dyeing, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del., has developed two new classes of experimental dyes. The trademark Latyl indicates those specifically designed for application to Dacron polyester fiber, while Roracyl is the name by which dyes for Orlon acrylic fiber will be known. Trial quantities of these dyes are currently available for use.

Desize and Dye Cotton Simultaneously Now

A new processing agent developed by E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del., called Merpol F, is recommended as a penetrating and leveling assistant in the application of dyes. Its most outstanding use is in the dyeing of cotton rawstock and yarns. In some cases, Merpol F is effective in combination with certain enzymes and dyes for simultaneous desizing, dyeing, and softening of cotton piece goods. The product has also been used in conjunction with oxidizing agents for producing an even bleach and is of interest for improving the knitting properties of mercerized cotton yarn.

New Vat Rose Has All-Over Fastness

Bright red-brown shades, similar to standard rose shades, with very good light fastness on both cotton and rayon are obtainable with Ponsol Red Brown 5R Paste. This anthraquinone vat color, made by E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del., is said to possess good fastness to chlorine, peroxide bleaching, washing, crocking, hot moist pressing, and water spotting. Good over-all fastness recommends its use for dyeing drapery and upholstery fabrics, dress goods, shirtings, towelings, and related items that require frequent laundering. Ponsol Red Brown 5R Paste will also find extensive use as a shading element in the production of light-fast dusty rose and wine shades.

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THIS IS NO. 96 OF A SERIES ON

GETTING THE MOST FROM TWISTING

Information about twisting designed to show improvements in twisting equipment and new ideas in the twisting operation

HOW TO FIGURE DRIVE PULLEY SIZES QUICKLY

The correct size of drive pulley for a given spindle speed on any of our twisters can be found on a nomograph we have prepared to save you time. For instance:

What size pulley drive should I use to get 14000 r.p.m. spindle speed if I'm using a 1750 r.p.m. motor and the diameter of the spindle whorl is 1¼ inches?

If yours is an everyday job of calculating answers to such questions, this one will give you little or no trouble. But if not, the formula may escape you momentarily, so we are listing formulae here which you may wish to keep on hand. However, with the nomograph you can determine more quickly the spindle speed that can be obtained with a given driving pulley diameter, or the driving pulley diameter required for a given spindle speed on any of our Uptwisters or our Universal Model 10 Ring Twisters.

In the formula: —

M = Motor Speed r.p.m.
S = Spindle Speed r.p.m.
D = Driving Pulley Diameter in Inches
d = Whorl Diameter in Inches

1. To find the driving pulley diameter for a required spindle speed:

$$D = \frac{S \times d}{M}$$

Example: S = 14000 r.p.m.; d = 1.25 in.; M = 1750 r.p.m.

$$D = \frac{14000 \times 1.25}{1750} \qquad D = 10 \text{ Inches}$$

2. To find the spindle speed:

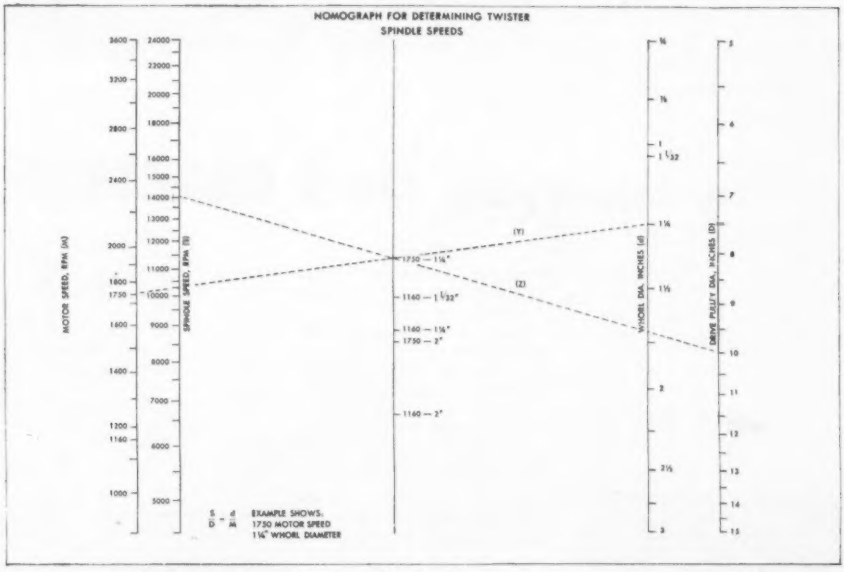
$$S = \frac{M \times D}{d}$$

Example: D = 10 in.; d = 1.25 in.; M = 1750 r.p.m.

$$S = \frac{1750 \times 10}{1.25} \qquad S = 14000 \text{ r.p.m.}$$

Keep in mind, however, that belt slippage, variations in belt thickness and motor speeds under load will cause the actual spindle speed to deviate slightly from the calculated figures. Spindles should be checked periodically to check their actual running speeds under these variable conditions.

The nomograph shown here is reproduced in a larger size in our publication "Twists and Winds" No. 96. We will be glad to mail it without charge to anyone not now receiving it.



Nomograph prepared by Universal engineers for calculating spindle speed or pulley size.

23.2.14

December, 1952

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

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LETTERS FROM OUR READERS

Round Table

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

PIN DRAFTER USE IS SIMPLE

Dear Editor:

Many articles on the subject of pin drafting give the impression that some users are not aware of the simple calculations involved.

Since the input speed remains constant and all changes of draft affect front-roller speed, it is unnecessary to know either the weight of slivers fed or delivered.

The formula becomes:

Doublings fed to Stage B

$$= \frac{\text{Number of Deliveries Stage A} \times \text{Draft Stage A}}{\text{Number of Deliveries at Stage B}}$$

Example—If two dual-head pin drafters with a draft of 6 are followed by two quads, then the doublings at the quad stage must be

$$\frac{4 \times 6}{8} = 3$$

for balanced production, assuming that efficiencies at each stage are equal.

Further, all writers in discussing the absorption of pin drafters into Bradford drawing sooner or later pinpoint the weak link in the setup; that is, the changeover from a twistless sliver to a twisted slubbing by a Bradford-type reducer or rover.

Since these latter machines are made for drafting against twist, their fiber-control arrangements are totally inadequate for dealing with a twistless sliver. It is possible to achieve some measure of fiber control by close ratching, increasing the pressure on the sliver between the rollers with heavy tumblers, using quarter-turn plates, condensers, etc., but the over-all picture is unsatisfactory. Low drafting at this stage is a step in the right direction, and less irregularity results with one doubling and low draft than two doublings and twice the draft.

It seems unfortunate that after the superior fiber control of the pin-drafting stages, the processing scheme should be spoiled at this changeover stage. Obviously, what is needed is some type of gill flyer reducer, preferably of the cone type. It has been suggested that a box of the Anglo-Continental cone finisher or cone reducer type could be used.

Unfortunately, while this would satisfactorily effect the transition from the twistless sliver to the twisted-slubbing state, there is the serious limitation of a maximum draft of 4½ that would adversely affect the production of the entire drawing. Therefore, a gill-type flyer reducer with increased drafting facilities would be far better.

Since the slivers would be light in weight, open-type gills would be suitable, and there would be no need to construct costly intersecting gill heads. If, in addition, Ambler Superdraft spinning were available, drafting from 40 drams per 40-yd. roving, then the number of deliveries at the cone gill reducer stage would be kept low and thus machine costs would be reduced. Also the reasonably heavy feed to this machine would help to reduce the previous pin-drafting costs.

Since the Ambler system spins all counts from one-dram weight of roving, (40 drams per 40 yd., with approximately 0.45 tpi. in the slubbing), once the set was balanced for production, it would remain so. The layout would be universal, in that it would process both wools and synthetic fibers with a minimum of adjustment.

The cone gill-reducer stage would be efficient, for neither excessive faller nor flyer speeds would be required.

If we assume a front-roll delivery of 1000 in. per min. and a roving twist of 0.45 tpi., the flyer speed would be 450

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Some date! That guy was so busy counting knitting courses he didn't even notice what was in the nylons!"

Exploring

The Textile Community

Russell Manufacturing Says "MERRY CHRISTMAS" to Its Town

▶ Holiday parties can be bore or benefit; it depends on the attitude of the people involved. A whole community is caught up in the festivities when the Christmas season gets started in Alexander City, Ala.

By MILDRED BARNWELL ANDREWS

BACK IN 1938 when the South was dubbed Economic Problem No. 1, an associate editor of *The Saturday Evening Post* wrote, "A thousand Ben Russells in the South would have made a very different economic history." Today it could be added that sons and daughters of Ben Russell are leading the way in this era of greater social understanding in a manner that may also add to Southern industrial history. The warm and all-encompassing program of community relations that the Russells sponsor and direct for the benefit of Alexander City, Ala., and the employees of the Russell Manufacturing Co. is homemade but vitally progressive. It is their heritage from Ben.

With the approach of the holidays, the Russells' year-round program is nearing a festive climax—the gala Christmas Ball for all employees and their families. As in past years, the whole community is caught up in the spirit of planning for the big party that is a small Mardi Gras, a bang-up stage show, and a dance with music by a cracker-jack orchestra.

TWO QUEENS are selected at each of Russell's holiday balls. Shown here the time the party was a "White Christmas" are, left to right, T. D. Russell, president of the company; Ruby McKinnon, who was chosen Miss Russell Manufacturing Co.; Sandra Roberts, Miss Russell School; and R. A. Russell, vice president.

Plans for the ball—whose theme this year is a "Christmas Circus"—have been under way for weeks. Soon after the date for the big event was announced, balloting began in each of the plants—the Russell Mill, the Bettie Francis, the Roberta, the Russco, the Elizabeth, and the Russcony—and in the school classrooms for candidates for their respective queens who will be crowned at the ball. One candidate is chosen from each of the mills' units, and one from each of the four classes in the school. Leading dress designers (using Russell fabrics, of course) have created special formal party frocks for the candidates. The gowns are so beautiful that it is now customary for the candidates to lend the dresses for display in a local store window after the ball is over.

From these candidates the two queens—Miss Russell Manufacturing Co. and Miss Russell School—will be chosen. After the queens are crowned as a climax to a stage show featuring the Choralteens (high-school students specially trained in music and dancing), the dance will be in full swing as the holiday season is officially opened for the mill employees.

The ball is a popular event, and a crowd of around 5,000 is expected again this year. Attendance is limited only by the number of employees and members of their families who can crowd into the auditorium.

The annual Christmas party started some years ago as an outgrowth of a program for the teenagers of the community. The idea caught on, and the affair grew to include all employees and their families. From Christmas to Christmas the decorations and festivities have grown more beautiful and more elaborate, and the stage show has become more spectacular as community interest has mounted.

The first Ball was called "Christmas Night," and the entire stage and ceiling of the auditorium were covered with blue cloth and hundreds of twinkly stars. Another year there was "Christmas in the South," with a broad curving stairway, a huge tree, crystal chandelier, and other typical Old South decorations. Again, there was a "White Christmas," with the setting an outdoor winter garden with snow-topped walls and garden benches and snow-covered trees. Last year it was a "Showboat Christmas," and the stage setting and songs were reminiscent of the real Southern showboat business.

This community-wide celebration of Christmas is just part of what the Russells do for their employees all year.

(Continued on page 236)

Split-second follow thru

"Live-Stick" action of G&K Hairitan® Leather Straight Check Straps assures smooth shuttle throw

Positive *follow-thru* is necessary for smooth shuttle throw with no bounce. To get this "live-stick" action with proper boxing and uniform shuttle flight on every pick, many textile men prefer Hairitan Straight Check Straps. Their low permanent stretch and high degree of resiliency mean top performance over long periods without down-time. Note how the Hairitan Straight Leather Check Strap flexes back as the stick draws it through the fingers — forms a "cushion" which receives the stick upon its return and gently slows its flight to a perfect landing at the end of the lay.

Orange Line loom leathers are engineered for that particular job which they are to perform, assuring the user of greater production with less maintenance. G&K-Dixie produces more than 50 types of loom leathers for use with Draper and Crompton & Knowles Looms.

CATALOG presents the complete line of Textile Leathers for weaving — also aprons and tapes for the woolen and worsted industry. Ask for a copy, on your letterhead.

CUT SHUTTLE COST
(No hot spurs)
STOP KINKY FILLING
(No shuttle-bounce)
REDUCE BANG-OFF
(Perfect boxing)
INCREASE PROFITS

These photographs were taken from the underside of a Draper X2 Loom operating at 175 picks per minute. Each picture was taken in 1/20,000 of a second. Note the punishing flexing these Hairitan Straight Check Straps must withstand. Their long life on this difficult job comes only from the scientific treatment given specially selected hides (hair-on and hair-off) resulting in high tensile strength with low permanent stretch. Made in all standard lengths and widths in single-ply 3/16", 7/32", 1/4", 9/32"; two-fold 5/16", 3/8".

second century G and K Orange® Line **Textile Leathers**

GRATON & KNIGHT COMPANY, Worcester 4, Mass. GRATON KNIGHT DIXIE **DIXIE LEATHER CORPORATION, Affiliate, Albany, Ga.**

Kinks AND SHORT-CUTS

OLD BROOM HANDLES can be put to work holding corners during nailing, soldering, or glue-setting.

Try These Clamps To Hold Square Corners

In our woodworking shop we find that one of the most frequent and also one of the most awkward jobs is the holding of two pieces of wood to form a square corner while the pieces are being nailed or while glue is setting.

We have made some little clamps that have proved extremely valuable but are cheaply and quickly made. A 1¼-in.-dia. close-grained broom handle is cut into 4-in. lengths. Each piece is then split lengthwise by two circular-saw cuts at right angles. Two-thirds of the way from one end a ¼-in. hole is drilled for a bolt fitted with a washer and wingnut.

To use the clamps, grip the work close to the bolt and place packing pieces equal in thickness to the work at the tail end of the clamp. (You can use bits of scrap wood hinged together with adhesive tape so that they are easy to handle.)

The clamps are so cheap that a great number can be made at one time and can be used to hold together a complete box until the glue has thoroughly set. The clamps are also very useful for soldering and brazing thin sheet metal corners. The wood does not conduct away the heat during soft soldering. *Clifford T. Bower, London, England*

Crank-Connector Bearings Repaired on the Loom

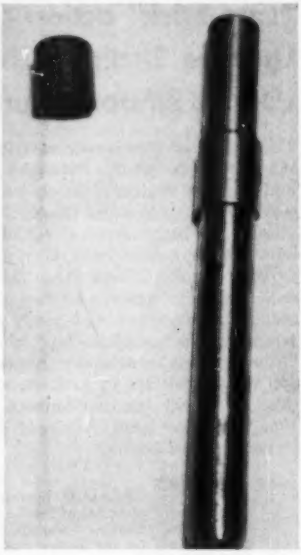
When the bushing in the lay-pin bearing wears out on S-looms, it's a big job to remove the tie rods and replace the bearings.

We have made a special tool to replace the bushing without disturbing the bearing. The tool is made from a discarded worm shaft from a precision let-off. The two Woodruff keys are removed from the shaft, the shaft is placed on a lathe, and the shoulder that the ratchet rests against is cut down to 1⅛-in. dia. The shaft is removed from the lathe, and the small end that holds the handwheel extension is cut off flush with the shoulder for the ratchet-pinion gear. The other end of the shaft is cut off 2 in. from the turned shoulder. This cut completes the tool.

To replace the bushing in the lay-pin bearing, we loosen the two lay-end setscrews that hold the stud for the connector and remove the stud. We lift the lay-pin bearing, insert the short end of the tool in the bushing, and let the tool rest on top of the lay-end surface that holds the bearing. The lay end holds the bearing while we drive out the bushing by hitting the tool with a hammer.

A new bushing is slipped on the small end of the tool, the oil hole in the bushing is aligned with the bearing, and the bushing is placed in the bearing by tapping the tool with a hammer.

Since we have been using this tool we have cut the bearing-replacement time in half, and we save the cost of the bearing. The tool lasts indefinitely. *William Zachara, Chester, Pa.*



A MACHINIST can make this tool in 15 min. to replace loom bushings without disturbing the bearing.

[Editor's note: This tool can also be used to replace the bushing for the worm shaft in precision let-offs.]

Use a Larger Plate To Stop Split Reed Cradles

The constant vibration of the reed cradles on our S-looms caused the wood to split at the plates for the adjusting screws. We had to discard a lot of reed cradles for this reason.

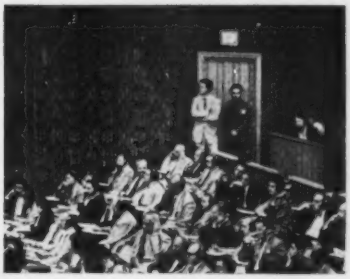
To correct this condition, we now use plates three times as long as the original plates. The plates are made from casehardened steel so that they will not wear quickly.

When we repair or build a new reed cradle in our carpenter shop, we chisel out the wood of the reed cradle to fit the new plates.

Since the larger plates cover more area of the wood on the reed cradles, the cradles last much longer. *James Adams, High Point, N. C.*

Rayon used for draperies in United Nations Buildings

The ultra-modern U.N. Secretariat Building recently completed in New York City.



Huge all-rayon tapestry wallcovering, woven in Norway, provides a symbolic background in Security Council Chamber—flaming hearts, shocks of wheat for fertility, and anchors for security.

Avisco rayon makes up 56% of the exquisite draperies reaching two stories high in this Conference Building lounge. Rayon's strength and soft beauty are a feature of this blend with cotton, mohair and gold metal fibers.

In the new U.N. buildings where attention of the entire world is focused—buildings as modern as tomorrow—rayon is contributing a welcome touch of soft, durable beauty to many of the draperies hung against the highly functional setting.

Blended with other fibers, Avisco rayon's ability to impart warm, friendly beauty, soft luxurious hand, and interesting textures and color combinations, has made it the choice for draperies in a number of the U.N. offices, suites, and lounges.

Other countries, too, helped to create the international tone of the buildings' furnishings, and it is noteworthy that a number of them also specified rayon. Examples are the huge all-rayon tapestry wallcovering from Norway used in the Security Council Chamber, and the Swedish draperies in two hallways and a restaurant lobby.

Simplified Identification of Fibers Welcomed by Textile Technicians

Avisco T.R.D. Engineer Tells New Plan; Copies of His Paper Now Available

In response to many requests, copies of a recent report by William R. Wilson of Avisco's Textile Research Department have been made available to the textile industry. The presentation, entitled "A Systematic Scheme of Fiber Analysis by Solvent Action," was given before the American Association of Textile Technicians.

Mr. Wilson pointed out that there are often so many different fibers in today's textiles that it has become very difficult to identify them. In a step-by-step description, he outlined an orderly procedure that requires only simple equipment and readily available chemicals. As many as twelve different fibers, natural and synthetic, can be identified by the method. For your copy of the talk, write or call American Viscose Corporation, 350 Fifth Avenue, New York 1, N.Y.

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*TMC & CCC

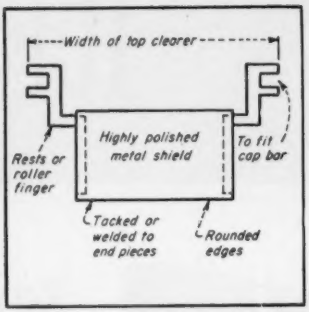
Roll Picker's Shield Keeps Dirt Out of Yarn

Gouts, slubs, and oil spots were common in our yarn when the pneumatic roll picker was used without protection for the yarn. We were, as a matter of fact, considering the idea of not using the gadgets until we solved the problem by fixing up a shield that keeps dirt out of the yarn during roll picking.

Dimensions of the shield depend, of course, on the gauge of the frame and the type of clearers; but you can get the general idea from the illustrations.

We made the shield in three pieces —two ends tailored to fit the frame, and a highly polished center section. The extended end brackets of the shield are cut out to fit on the cap-bar bearings and to rest on the cap-bar ends so that the pan does not rest on the pig-tail guides.

The center portion is welded or tacked to the end brackets, and the entire shield weighs only 12 oz. The sides of the shield are bent up about ½ in. to funnel the dirt to the floor and not to fall on the adjacent ends.


Width of top clearer
Highly polished metal shield
Rests on roller finger
To fit cap bar
Tacked or welded to end pieces
Rounded edges

YARN IS PROTECTED from roll picker's flying lint and oil by this shield. The shield can be made of any polished light metal and fits on the cap-bar bearings and rests on the cap bars.

To use the shield, the roller picker takes off two top clearers and works from right to left. The shield is put on the first section, and when the right hand (with the roll picker) gets to the end of the shield, the left hand moves the top clearer and then the shield.

We've checked our yarn pretty carefully and find that we have stopped up to 40 bad places in the yarn from one 120-spindle side by using the shield.

Our roll-picker operators clear 48 sides of rolls and front stands in 8 hr., and their work has not been slowed up by the shield. As a matter of fact, they want to use the shield when they see how quality is improved with it. *J. B. Boyter, Dallas, N. C.*

Use Sealing Wax To Repair Shuttles

The thread-guide pins in our shuttles often work loose and protrude above the surface of the shuttles. When this happens, breakouts or fuzzed warps are always made.

We now use sealing wax to hold loose pins in our shuttles. First we seat the loose pin firmly with a pin punch. Then we light one end of a stick of sealing wax and hold the lighted end directly over the pin head.

The melted wax fills the hole and seals it permanently. Excess wax is cut off with a knife after it hardens, and the shuttle is sanded and polished.

We don't worry any more about loose thread-guide pins and we're saving money on shuttle replacement. *C. L. Ashmore, Burlington, N. C.*

A Short-Cut Method for Calculating Twist Gears

You can use a slide rule to calculate twist gears in a matter of seconds. Here's how you do it.

1. Set the hairline at the yarn number on the top or A scale.
2. Read the square root of the yarn number on the D scale.
3. Slide the C1 scale over until the

$500 for Best Kink in 1952 $25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpfull to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

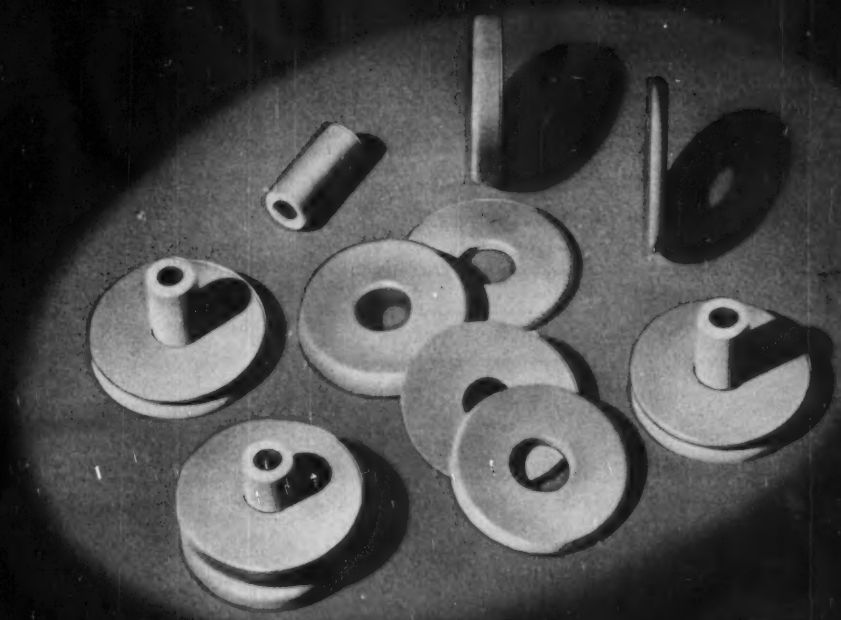
Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1952.
3. All Kinks paid for an acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.



AlSiMag 513 is the hardest and strongest ceramic ever produced by American Lava Corporation. It is 9 on Mohs' scale. Resists wear and chipping . . . maintains original finish LONGER THAN ANY OTHER MATERIAL.

ALSIMAG® 513

TENSION DISCS AND TENSION POSTS ARE *HARD*

THEY RESIST CUTTING AND WILL MAINTAIN UNIFORM FINISH FOR A LONG, LONG TIME.

One mill had to replace former tension discs and posts every 6 weeks. That mill has now run AlSiMag 513 tension discs and posts for 78 weeks. And they still show no signs of wear. This was under normal operating conditions in a mill processing one of the most abrasive yarns in the textile industry. This is a typical record for AlSiMag 513. You, too, can get equally good results in your mill.

AlSiMag 513 Tension Discs are ground flat within 0.0001 for perfect yarn contact. They are rigid and they stay flat.

AlSiMag 513 Tension Discs and Tension Posts can be supplied with satin or highly polished surfaces. They can be made in any sizes you wish. Discs of any desired weight can be furnished by specifying the proper thickness of the disc. Sizes and weights will be uniform from piece to piece and shipment to shipment.

AN INSTALLATION OF ALSIMAG 513 TENSION DISCS AND TENSION POSTS CAN SHOW YOU DRAMATIC SAVINGS AND INCREASE YOUR QUALITY BECAUSE OF MORE EVEN TENSION CONTROL. TEST SAMPLES IN STANDARD SIZES ARE AVAILABLE.

51ST YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

NORTHERN AND EASTERN SALES ENGINEER: Jay S. Gosnell, American Lava Corporation, 671 Broad St., Newark, N. J., Mitchell 2-8159. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tennessee, Phone LD-62.

Best-Kink Award for October

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

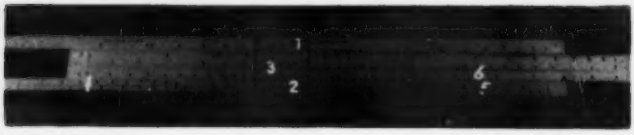
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for October, according to TEXTILE WORLD reader-judges, was:

"How to Figure Size for Rayon Slashing"

Norman S. Buchan

Mr. Buchan is being sent a check for $25 with the compliments of TEXTILE WORLD



TWIST GEARS for roving, spinning, and twisting frames can be quickly determined with a single setting of the slide rule.

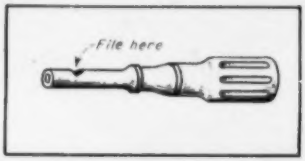
twist multiplier is under the hair line.

4. Read the twist per inch on the *D* scale under the numeral 1 at the left end of the *C* scale.

5. Slide the hair line across until it is in line with the twist constant as read on the *D* scale.

6. Read the value of the twist gear on the *C* scale.

In the example illustrated: yarn number is 10s, twist multiplier is 4.25, twist constant is 740, and the twist gear is 55. *J. M. Cooper, Gastonia, N. C.*



FILE THE OPENING with a rat-tail file until the opening is cut to the core and forms an arc.

Alter Dobby-Peg Wrench To Prevent Clogging

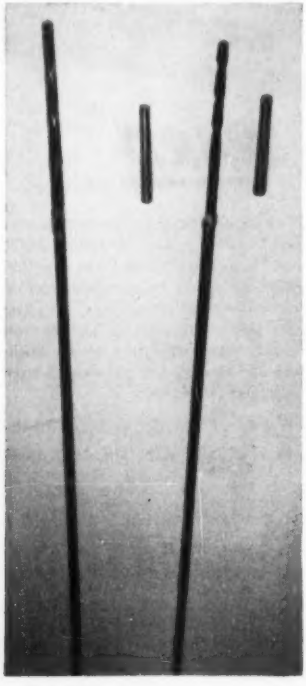
Oil and grease from the dobby pegs used to stop up the opening in the shank of our dobby-peg wrenches.

We filed a small opening in the side of dobby-peg wrench shank to permit the foreign matter to escape from the wrench.

We can now build patterns on our harness dobby chains much faster since we don't have to stop work to clean out the wrench. *Bernard Dixon, Danville, Va.*

How To Clean Shuttle Fur

Miniature hand cards can be used to clean shuttle fur that has become clogged with lint or dirt. *The Howard Way.*



We Use a Tapering Pin To Fasten Lay Ends

Lay ends on S-looms are fastened to the laysword with straight dowel pins of about ¼-in. dia. They are usually driven in the laysword and the lay end from the front of the loom, and the head of the pin is often battered.

When it is necessary to remove a lay end that is broken or to remove one for realignment, the battered pins cannot be driven out from the front; and it is difficult to knock them out from the back if a warp is in the loom.

We now use No. 11054 tapering pins, made for the cam plate on box motions, to fasten the lay ends to the layswords.

A ⅛-in. drill bit is welded to a ¼-in. extension rod (the over-all length of the drill and rod is 19 in.) to bore holes in the lay end. Another extension of the same type is made and a No. 4 tapering reamer is welded to it.

To use the tapering pins, we align the lay end and tighten all the bolts firmly. Two holes are bored through the laysword with the ⅛-in. drill bit. Then the tapering reamer is used to bore the hole to fit the tapering pin. Usually about one-half the length of the No. 4 reamer should be used to be sure that the pin is a tight fit. The pin is tapped firmly into the hole from the front of the loom.

When a lay end is to be removed, one sharp blow with a medium hammer will knock the tapering pin completely out.

Lay ends are easily removed, and we have fewer broken ones since we've been using tapering dowel pins. *J. L. Gardner, Lancaster, Pa.*

MAKE THE EXTENSIONS six at a time in the mill machine shop.

Hints for Color Matching

1. For most types of matching, reflected light is adequate; but it is sometimes advantageous to use transmitted light, especially for dark colors. In some cases, reflected light shows no difference in the samples.

2. A circular knitting machine can be a useful tool to the color matcher. After the original shade has been matched in raw form, make the yarn, knit it up, and finish the sample. Slight color variations that are not easily detected in the yarn are often easily seen in the knitted fabric. *C. Lodge, Yorkshire, England*

Help Your Looms Weave Better Profits

with Uxbridge *Gentle-Air* Warp Drying

Our Gentle-Air Slasher Drying units give considerably greater production than the various types of cylinder machines they are replacing in many mills.

Drying is done by passing heated air gently through the yarn — completely eliminating cans and thus reducing explosion hazards to a minimum. Since yarn is 60% to 70% dry before any contact is made with rollers inside drying box, roll laps are practically non-existent. Yarn remains smooth and round, resulting in more perfect fabrics, greatly reduced occurrence of profit-devouring seconds.

These revolutionary Gentle-Air fast drying units will operate in conjunction with the front and back ends of any conventional slasher — new or old. Have us send you descriptive bulletins, without obligation.

SEND FOR:
Bulletin A: Maximum Production Model, from 1250 up to 1780 lbs per hr.
Bulletin B: Normal Production Model, up to 750 lbs. per hr.

AT YOUR SERVICE. Our Engineering Department at Uxbridge will gladly study your slasher room problems, and consult on ways to increase and improve production — at no obligation to you. We guarantee there will be *no sales follow-up* unless you specifically request it.

Just notify us to have an Engineer call at your convenience.

BACHMANN **UXBRIDGE** WORSTED
CORPORATION
UXBRIDGE, MASSACHUSETTS

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More warps & Better warps

Examiner's Classification Report

Mill..... Examiner..... Date.....

Quality	Loom	Cut	Imperfection	Grade	Shift 1	2	3

Examiner's Daily Report

Mill..... Examiner..... Date.....

Qual.	Cut	Loom	Warp yarn	Fill'g yarn	Grade	Shade	Yd.	Imperf'n	Width

Examiner's Weekly Report

Mill..... Examiner..... Date .....

Picker's name	Hours worked	Cuts picked	Yards picked

Inspector's name	Hours worked	Cuts examined	Yards examined

Quality	Grade A	B	C	Cuts remaining in inspection room

CLOTH-INSPECTION FORMS that may be useful in classifying and recording defects are shown here. They include a classification sheet that the inspector uses in describing the defects found, a daily report on which all defects found are consolidated, and a weekly report on which a permanent record is made.

Cloth-Inspection Forms

Three report forms that might be of help to cloth examiners are shown in the accompanying illustration.

In any mill's quality program, the cloth examiner is an important person. While his job is not an easy one and he seldom gets the credit he deserves, a good inspector can go far in helping to control weave-room seconds.

For an examiner to do his job well, it is necessary for him to be well trained in finding, classifying, recording, and correcting defects.

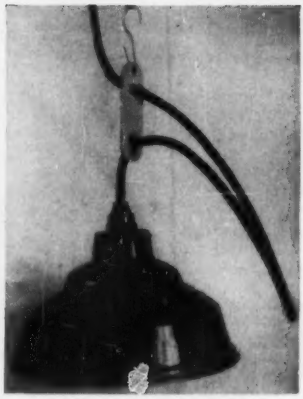
The forms shown provide convenient means for the examiner to classify and record the major defects he finds in cloth.

At top is the inspector's worksheet. On it he identifies the cloth and records a full description of each defect as he finds it.

Form in middle is useful for the supervisor or clerk to consolidate reports of several examiners on one sheet. It makes a convenient daily report for filing and for routing to the overseer, the weave room, and any other department or person who receives routine reports.

Bottom form is a consolidated report for the week. In many mills such a report is kept for something approaching a permanent record.

In our mill, three major imperfections spoil a cut of cloth. Because of present market conditions, we insist upon much more rigid inspection than we did two or three years ago.



INCANDESCENT LAMP cords can be adjusted with a piece of plywood with two holes in it.

Here's an Easy Way To Adjust Lamp Height

A lot of light fixtures are like the one illustrated and give a general illumination over a wide area when placed fairly high over a machine. When you make adjustments and set up machines, however, more light is required over a small area. This light can often be obtained by bringing the light closer to the working area.

A simple height adjuster that we find very useful and very economical consists of a piece of thin plywood with two holes placed about 3 in. apart. The holes are drilled for a fairly close sliding fit for the cord.

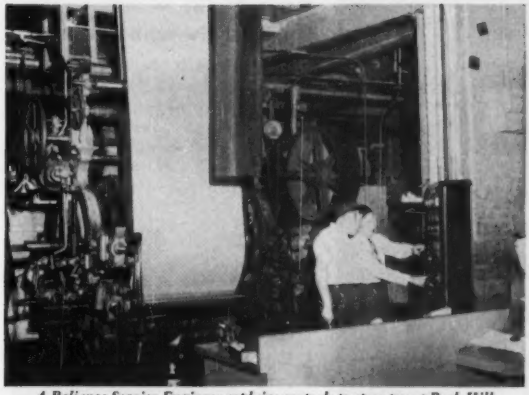
The light can be raised or lowered easily if you adjust the length of the cord loop. The weight of the fixture locks the cord in the holes.

Our maintenance department makes considerable use of this height adjuster for temporary lighting on jobs that will take several days to complete. In such cases the flexibility offered by the simple height adjuster is very valuable. *Clifford T. Bower, London, England*

Blanket Cloth Stops Filling Waste in Cloth

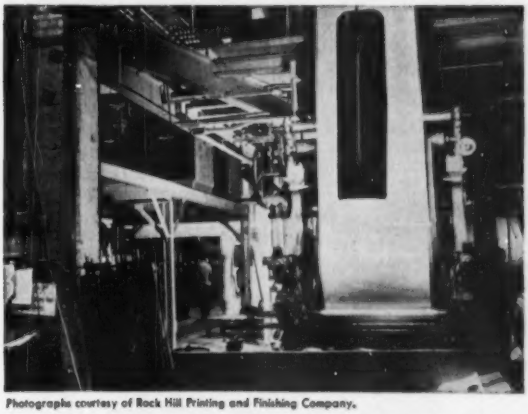
On C&K looms, the No. 1511 and 1512 thread cutters hold the filling end from the transferred bobbin until the next filling transfer. As soon as the temple knife cuts the filling at the cloth selvage, the loose filling end dangles and often gets on the race plate and is woven into the cloth. On rough filling, these waste ends are hard to pull out of the cloth; and it takes a lot of the burler's time to correct the defect.

We use a strip of wool blanket



A Reliance Service Engineer explains controls to operator at Rock Hill plant at time of start-up.

Operator is free to inspect cloth to maintain quality. Convenient central control panel at extreme right permits adjustment to any or all of the five machine sections.



Photographs courtesy of Rock Hill Printing and Finishing Company.

*V*S Drive Control Unit can be located where no useful space is wasted. Two of these units are shown above floor in passage from color room to printing room.*

PRODUCTION CAPACITY UP MORE THAN 44%! OPERATING COSTS REDUCED

World's largest print works converts to RELIANCE engineered range drives

The Rock Hill Printing and Finishing Company is in the process of converting seven of its print machines to Reliance V*S Adjustable-speed Drives. The first machine to be converted has been operating successfully since July, 1952.

The converted print machine operates over a speed range of 30 to 130 yards per minute. As compared with the former maximum speed of 90 ypm., this represents an increase of over 44% in production capacity! At the same time, replacement of mechanical devices by a completely sectional electric drive has greatly reduced and simplified maintenance, and has effected sharp reductions in "down time".

Under all operating conditions over a speed range of more than 4 to 1, the Reliance drive system maintains any set line speed easily and maintains tension with hairline accuracy between the print machine and the print goods dryer. A master control station provides the operator with convenient control for the entire drive from one central point.

Performance of the first machine converted to Reliance V*S Drive has been so successful that six additional conversions have been ordered for completion by January, 1953.

Your operation, too, can benefit from Reliance V*S Drive. Application Engineers at any of the 45 convenient Reliance Sales Offices will be glad to show you how... or write for Bulletin D-2311, describing the Reliance V*S Drive... the original all-electric adjustable-speed drive for a-c. circuits.

Sales Representatives in Principal Cities

RELIANCE V*S DRIVE

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 IVANHOE ROAD, CLEVELAND 10, OHIO

cloth to help keep the waste ends out of our cloth. The cloth is cut in 1½-in. strips at least 15 in. long. A ¼-in. slot is cut in the center of the blanket cloth, widthwise, ¼ in. from one end.

The dog-point setscrew is removed from the upright connector rod at the back of the thread-cutter blade, the setscrew is inserted through the slot in the blanket cloth, and the setscrew is replaced in the blade. The loose end of the blanket cloth hangs between the breastbeam and the lay.

When the temple knife cuts the filling end, the dangling end soon attaches itself to the blanket cloth, where it is held until the thread cutter releases it at the next filling transfer. The accumulation of waste ends gradually works itself to the bottom of the blanket cloth and drops to the floor.

The cost of the blanket cloth is small, and the filling waste in our cloth has been all but eliminated since we have been using this setup. *John Kay, Paterson, N. J.*

Plate Broom Holder Doesn't Get in the Way

Keeping brooms and brushes off the floor when they are not in use is a real problem in most mills. Tripping over broom handles extending into alleys has been the cause of many accidents.

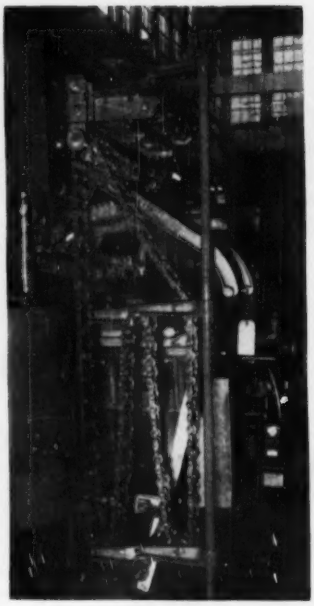
Eye screws attached to the ends of broom handles have been used in some mills. The disadvantage of this method is that when a new broom is required a new eye screw must be put in. The objections to spring holders are that they lose their springiness after a short period of use and they also project far enough from the wall to form a troublesome obstruction.

The simple plate holder overcomes all of these objections. It is cheap, easy to make, and simple to attach. It requires no replacement, has no springs to lose their grip, and it lies flat so that it is out of the way when not in use.

The easiest method of attachment is with a small eye screw. The eye is opened slightly so that it can be inserted through the ¼-in. hole in the end of the plate. The eye screw may be screwed into any wooden surface at a convenient height.

For attachment to a metal surface, a hooked machine screw in a tapped hole can be used. The plate may then be hung on this hook.

The plate is held in horizontal position. The top end of the broom handle is placed in the 1¼x1¼-in. hole in the plate. The weight of the broom pulls the plate down and locks the broom handle in the plate. The slight curve in the plate increases the grip.



A RACK FOR BOX CHAINS is a convenient means for keeping long chains out of the way and handy to the looms. The rack shown here was made of discarded parts.

Box-Chain Rack Made of Old Parts

A simple box-chain rack for long box chains may be constructed from parts usually found on the scrap pile of a mill.

Parts necessary are a piece of bar stock ⅞ in. or 1 in. in diameter and 6 ft. long, a base or pedestal to hold the rod upright, and three adjustable arms for the chain pulleys.

These pulley arms may be made by welding a flat bar of iron stock 12 in. long, 2 in. wide, and ⅜ in. thick to a collar that is adjustable on the upright rod. Discarded creelboard arms from roving frames or spinning frames are suitable for this purpose. In one mill, all the parts necessary were taken from discarded parts of French drawing-frame creels.

The chain rack may be easily moved from one loom to another. It can also be placed in a convenient location near a wall or a post in the room.

Waste Less Belting

We save time and measure belting more accurately by marking a board in feet and inches and placing it in front of the belt racks in our supply room. *Avondale Sun*

Put a Night Switch On Your Switchboard

A night switch can be put on your switchboard for a few dollars. Such a switch allows in-plant telephones to be used after the switchboard closes every night and on week ends when it is unattended. *H. A. Concannon, Ashton, R. I.*

THE BEAM IS LIFTED by the lever fastened to the truck's upright girder. A chain with a hook on the bottom is fastened to the short end of the lever to lift the warp beam.

This Warp Truck Eliminates Manual Lifting

Our warp men and tying-in machine men were always in danger of having their backs hurt when they placed warp beams in the loom-beam bearings.

We designed a truck to place drawn warp beams or tie-beams in our looms. To a regular steel warp truck we added an arm to lift the beam and a swinging rack to hold the harnesses.

We bolted an arm to the inside of the upright channel-iron girder on each end of the truck. The arm has a chain connected to the short end with a hook on the end of the chain. When the beam is to be lifted, the hook is fitted to the beam gudgeon, and the arm is pulled downward. The truck is moved to position the beam gudgeon inside the let-off on a C&K S-model loom or over the beam bearing on Draper looms.

The cross girder directly below the top cross girder was removed from the truck and a length of 1½-in. channel iron was bent around the girder, one on each end, so the channel iron would swing on the girder. The girder was replaced on the truck. The channel iron was bent at a right angle over the top cross girder.

An extension for the channel iron was made from a piece of strap iron that was slotted and fitted with two wing nuts and bolts to be used for drawn warps that use from 4 to 24 harneses.

Friend or Foe?

Any lubricant a textile manufacturer uses can be either friend or foe. It will save him money and step up production... or ...waste his dollars and hold up production.

Cities Service Textile lubricants are specifically designed to help increase production on all textile machinery... designed to assure you cleaner machine bearings and shafts, and cleaner finished goods, too.

Eliminate wasted time and money... Keep production at maximum... Use Cities Service lubricants. When you have a lubricating problem, call in the Cities Service Lubrication Engineer. He can help you. Write Cities Service Oil Company, Dept. L38, Sixty Wall Tower, New York City 5.

CITIES SERVICE

Quality Petroleum Products

TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

Free Technical Information

Reader Service

MILL EXECUTIVES may obtain free for the asking . . .

. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

. . . FURTHER INFORMATION on
New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

WRITE ON THIS CARD

. . . to get more information on anything published in the editorial or advertising pages of this issue. If your inquiry concerns equipment or supplies, name the specific equipment or supplies involved. If your inquiry concerns anything other than equipment or supplies, you must state specifically the information you want.

. . . to send a Kink, a letter for Round Table, or a news note.

. . . to comment on anything appearing in this issue.

. . . to query the editors about any manuscripts you might wish to submit to them.

. . . to send an inquiry to the Questions & Answers department.

●

Cards require no postage . . . but be sure to give your name, title, mill connection, and address.

●

CIRCLE THE NUMBERS ON THIS CARD

. . . to request copies of trade literature described on the next and following pages or to get more information on New Useful Accessories described in this issue.

Dear Editor — DECEMBER, 1952

Please send me additional information on the following:

PAGE	SUBJECT	PAGE	SUBJECT
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Please send me the following: DECEMBER, 1952

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS... Listed here for December are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY AND AUXILIARY EQUIPMENT

"Versatile Drafting for Boring" is the subject of a bulletin prepared by Saco-Lowell Shops. Two modifications of the FS-3 system, the FS-3 and FS-3W, that handle medium-length synthetics on the fundamental Shaw system are discussed. The FS-3W system handles a staple range of ⅝ to 3 in. (F-1)

The random-web process for forming fibers into a continuous web is discussed in a publication of the Textile Div. of Curlator Corp. A feeder and webber will produce a web weighing up to 35 oz. per sq. yd. suitable for processing products such as mats, felts, and nonwoven fabrics. (F-2)

The manufacture of overalls, coveralls, service shirts and pants with sewing machines designed for the several types of garments is discussed in two bulletins of the Unico Special Machine Co. Charts showing stitch and seam types are included. (F-3)

A bibliography of spectrophotometer applications has been prepared by Beckman Instruments, Inc. A section on identification, analysis, and color measurement includes textile applications. (F-4)

Temperature regulators that operate on the simple principle of liquid expansion are announced in a bulletin of Farris Stacon Corp. The range of adjustment is 50° F. (F-5)

A slasher room that uses speed and temperature controls is a feature of "Instrumentation," the second-quarter edition of the magazine of Minneapolis-Honeywell Regulator Co. (F-6)

Textile-loom equipment is described in a catalog of the Greenville Belting Co. Name your need, from abrasive cloth to X-I bumpers, and it will be in this catalog. (F-7)

Compressors that are guaranteed to compress air or gas free of oil or oily vapor are described in a bulletin prepared by Pennsylvania Pump & Compressor Co. A sectional view of a 9-in.-stroke compressor is featured. (F-8)

Magnetic separators for the textile industry are discussed in a brochure of Eriez Mfg. Co. The magnets prevent fire and protect machinery from tramp iron. (F-9)

Steam generators with two horizontal drums and integral water walls are discussed in a bulletin of Erie City Iron Works. The generators are factory-assembled or field-erected. Several textile mills are listed as users. (F-10)

Signaling temperature controllers of the resistance-bulb type are described in a bulletin published by Thermo Electric Co., Inc. (F-11)

Electronic instruments for controlling process variables are the subject of a publication of The Bristol Co. Temperature, speed, thickness, power, and other variables can be controlled. (F-12)

The pH theory and its applications in industrial measurement and control are discussed in a bulletin of The Foxboro Co. The units employed in the pH-control cycle are explained. (F-13)

Indicating and recording pressure gauges are described in a specification bulletin prepared by Minneapolis-Honeywell Regulator Co. Construction and engineering details are given. (F-14)

GENERAL

The trucking routes of McLean Trucking Co. are shown in a bulletin prepared by that company. North and South Carolina are shown to be honeycombed, and routes to the North are given. (F-15)

A visible-record system is described in a booklet put out by Remington Rand Inc. The cards used in the system are supplied in chains for easy typing and are easily separated for filing in the visible-record pockets. (F-16)

Want a government contract? A government-procurement manual designed to aid manufacturers in obtaining government business has been published by Triiane Associates, Inc. (F-17)

Kansas City offers industry a booklet on the advantages of Kansas City called "Kansas City Offers Industry," prepared by the Chamber of Commerce. Industrial sites, labor, power, taxes, and similar topics are discussed. (F-18)

"Community Recreation for Defense Workers" is the name of a booklet prepared by the National Recreation Assn. Plant-centered and community-centered special recreational programs are discussed. (F-19)

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Reader Service (Continued)

"Why did 8,058 businesses fail in 1951?" is one of the questions answered in a booklet put out by Dun & Bradstreet, Inc. The title is "Commercial Failures in an Era of Business Progress 1900-1952." **(F-20)**

A checklist for management of 25 questions on factors such as production control, training, bonus systems, and organization is published by The Harold F. Howard Co. **(F-21)**

American Thread Co. tells its story to its employees. The booklet explains all phases of the American Thread story in simple language. **(F-22)**

Compulsory unionism and why GE is against it is the subject of a pamphlet prepared by General Electric Co. Thirteen questions and answers are used to present the argument. **(F-23)**

Perfect welts can be produced by the use of calcium alginate yarn, according to a pamphlet prepared by Courtaulds Ltd. **(F-24)**

Burglary protection is discussed in a booklet put out by Remington Rand Inc. Chests of heavy steel ranging in size from 175 lb. to two tons are said to protect valuables and reduce burglary-insurance rates. **(F-25)**

SUPPLIES & CHEMICALS

Two dozen "Scotch" tapes that meet various government specifications are described in a manual published by Minnesota Mining & Mfg. Co. Besides the tapes for masking and packaging, tapes for electrical equipment and magnetic tapes for recording are described. **(F-26)**

Wrapping and protective-material samples are included as pages in a book prepared by the Sisalkraft Co. **(F-27)**

A corrosion-resistant coating that can be applied by brush or spray is described in a bulletin of Ric-Wil Plastic Coating & Mfg. Corp. The coating can be used on all types of process equipment. **(F-28)**

A handwheel hub with no setscrews to wear and a pick-arm stop that eliminates metal-to-metal contact on W-3 looms are described in two bulletins of The A & W Machine Co. **(F-29)**

Rubberized-rug-backing facts are given in a bulletin put out by Testworth Laboratories. Methods of application and production are a feature. **(F-30)**

Industrial housekeeping products are described in a catalog of the Puritan Chemical Co. Cleaners, mops, pest controllers, etc., are described. **(F-31)**

"The Science of Economical Shelf Storage" is the title of a publication of Frick-Gallagher Mfg. Co. Round-rotating shelves are said to provide the most efficient storage for many parts. **(F-32)**

"Material Handling, A Full New Science of Industrial Operation" is the subject of a bulletin prepared by The Material Handling Institute, Inc. The need for material handling and types of equipment used in industry are discussed. **(F-33)**

"The Control of Dermatitis in Industry" is the title of a booklet prepared by West Disinfecting Co. Products formulated to solve the cleansing and sanitation problems in industry are discussed. **(F-34)**

An aluminum-chromium preservative for outer and inner surfaces, which is also decorative, is described in a bulletin of The Monroe Co., Inc. **(F-35)**

Conveyors for material flow are described in a bulletin of The Rapids-Standard Co., Inc. "Material flow is the bloodstream of business," the bulletin says. Gravity and power conveyors and hand trucks are treated separately. **(F-36)**

Six aromatic amines are described in a bulletin prepared by Tennessee Eastman Co. Information regarding their use

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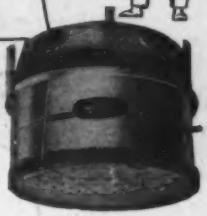

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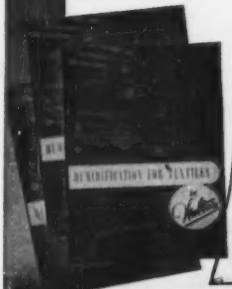

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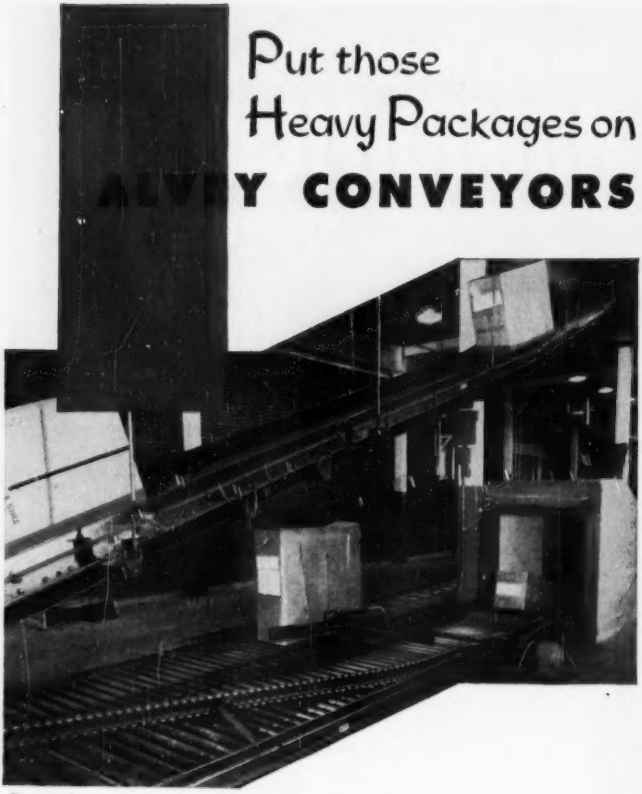

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Reader Service (Continued)

as dyestuff and light-sensitive salt intermediates is included. **(F-37)**

ENGINEERING AND MAINTENANCE

Ball-bearing lubrication and maintenance problems are discussed in a bulletin of The Fafnir Bearing Co. Reasons for lubrication and the advantages of oil or grease are discussed. **(F-38)**

"How To Operate a Lift Truck" is a manual put out by Hyster Co. It is designed to help a beginner become a trained operator and to help an experienced operator rate his knowledge. **(F-39)**

Industrial insulation products are the subject of a new catalog published by Baldwin-Hill Co. Insulating cement, block, blanket, felt, and felt coverings for the temperature range from 150 to 1,800° F. are described. **(F-40)**

Acoustic panels to silence noise are described in a booklet prepared by Industrial Acoustics Co., Inc. The booklet says that these panels have been standardized for the first time. **(F-41)**

V-belt links are discussed in a bulletin of Brammer Corp. A selection table with power-correction factors is a feature. **(F-42)**

Flexible couplings are described in a catalog of Thomas Flexible Coupling Co. No maintenance, no lubrication, no backlash, and no wearing parts are said to be the advantages of the couplings. **(F-43)**

"Power Transmission Through Belts" is the title of a bulletin of Power Transmission Council, Inc. The bulletin discusses the subject thoroughly. **(F-44)**

Cast-tooth sprocket wheels are described in a bulletin of Link-Belt Co. Over 200 sizes are available from stock. **(F-45)**

Immediate-setting floor patch repairs holes, ruts, breaks, and pitted areas in concrete floors. The patch is described in a folder of Flexrock Co. **(F-46)**

Steam and air traps are described in a bulletin of Armstrong Machine Works. The operating principles and design features of inverted-bucket traps are discussed. **(F-47)**

Shaft-mounted speed reducers with output speeds from 12 to 330 rpm. and capacities from 1 to 43 hp. are described in a bulletin of Dodge Mfg. Corp. An installation on a woolen card is shown. **(F-48)**

"You can have more temperature production without adding to your boiler plant," Maxon Premix Burner Co. claims in a publication addressed to textile dyers and finishers. You can get this result by adding an air heater to your textile dryer. **(F-49)**

An industrial vacuum machine for wet and dry pick-up work is featured in a bulletin of Hild Floor Machine Co. The same filter is used for wet and dry work. A free demonstration at your plant is offered. **(F-50)**

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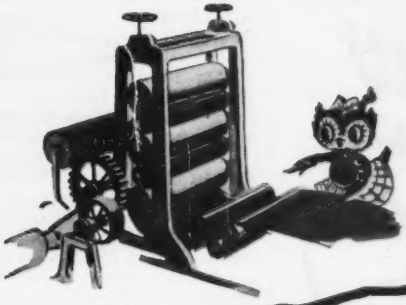

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Rayon-Weaving Job

(*Continued from page 113*)

To prevent loose yarns from being dragged into the cloth on the transfer of the bobbins, the battery end of the looms is cleaned each day. A cleaner on each of the three shifts cleans one-third of the looms daily. The battery, lay end, shuttle box, picker, picker stick, and all the surrounding area are cleaned of loose yarns and accumulations of dirt. Little foreign matter gets in the fabric.

Empty looms are thoroughly cleaned with a solvent. Brushes and rags are used to remove waste oils.

Looms that will have warps tied back in are cleaned too when warps are out.

Training Makes the Job

The aim of the training program is to form a reservoir of skilled employees who can step in at any time and run jobs a step above their present jobs.

Loomfixing training is the most important part of the sound and adequate training program.

Off-the-job training of loomfixers is supervised by an instructor who is a skilled loomfixer. The men trained in this part of the program are weavers, smash hands, and warp men.

The instructor is paid by the mill. The persons being trained are not paid and are trained on their own time before or after their regular shift.

The instructor handles this part of the training program this way:

On Monday, Wednesday, and Friday, four to six loomfixer trainees come directly from their jobs to the training room. Each trainee has a copy of a loomfixer's manual, which the instructor uses as a guide to tear down, rebuild, and reset all the loom motions. After this instruction, the trainees also do the job under the direction of the instructor and with the help of the manual. The manual is studied by the trainees at home between sessions to help them learn special loom settings.

Swatches that contain actual cloth defects are shown to the prospective loomfixers, and they receive instructions on how to adjust the loom parts and the warp to prevent specific defects.

On-the-job training is constantly being done in the weave room on all three shifts. The loomfixing instructor goes from loomfixer to loomfixer and explains the loom settings for every style of cloth. Even though the older loomfixers in point of service know all the settings, they go through the setting-up practices too, and ideas they contribute often improve the methods.

Weaver's training is simpler than

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GAIR NEIGHBORHOOD PLANTS are part of an organization replete with top-flight packaging experts who have the technical know-how to help you in creating the most efficient and the most protective shipping container for your merchandise.

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loomfixer's training. Regular weavers are given training out of production on company time. Then the new methods are followed up by the instructor in the weave room in a manner similar to that of on-the-job loomfixing training.

A new and inexperienced employee can go to work as an hour hand at this plant and work up to any position above him because he's always being trained for a better job. He can also transfer to another of the company's plants if there isn't an opening at his own mill when he becomes ready for advancement.

Proper supervision, cloth inspection, control of seconds, loom maintenance, correct cleaning methods, and employee training make this big weaving plant as efficiently run as the best mills less than half its size.

Modern Weave-Room Methods

(*Continued from page 119*)

if the first 12 selvage ends next to the body of the cloth are drawn two per harness eye and the other ends (total 48 ends per selvage) are drawn one end per eye.

Tight selvages will also be slackened if the selvage ends are needed 3-2 throughout the selvage.

[*Editor's note:* We believe that tape selvages will consistently give a more uniform selvage in width and tension and will also run better on the loom than plain selvages.]

How To Tie Warps Straight

When a Barber-Colman portable tie-in machine is used, it's important to have the warp straight and properly leased at the loom and to have the warp from the slasher room straight.

Eleven mills that reported their tying methods were close together on their procedure. Masking tape seems to be the best tape to use to hold the warp ends straight when a warp is doffed at the slasher. And end-to-end lease is made at the drop wires.

To prepare the pattern to be tied:

1. Check to see that all ends are in place (the weaver)
2. Straighten crossed ends (the warp man)
3. Place two lease sticks in the warp
4. Place a comb in front of the lease sticks and tie it down
5. Pull the lease sticks and the comb back to the drag roll
6. Cut the warp out 36 in. from the drag roll

To prepare the new warp:

1. Lay the warp in the beam stands
2. Pull the end of the warp over

Continuous Cleaning

Ringrail to Rafters

They surely must be doing a job, these Parks-Cramer Traveling Cleaners, for they are now standard equipment for more than 17,000,000 spinning, twisting, winding, spooling, and warping spindles.

And now its own twin, the Up-draft Cleaner, prevents lint accumulations topside. With Frame Cleaners, it runs tandem. In cardrooms or in other preparatory areas, it runs solo. And will it keep lights, conduits, ducts, and such, clean? You wouldn't know the place!

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SEALMASTER *Ball Bearing Units*

With ZONE HARDENING*

ZONE HARDENING is a completely automatic heat treating process by which the inner race ring of SEALMASTER Ball Bearing Units is hardened—through the ball path section only! (See 1 in cutaway view.) The extended part of the inner race is left in its original metallurgically soft tough state. Hardened set screws are mounted through this soft portion of the race (See 2 and 3), permitting race-to-shaft locking with increased holding power and greater resistance to shock and vibration. Firm lock of bearing to shaft minimizes danger of fretting corrosion and eliminates shaft wear.

SEALMASTER first introduced the self-aligning, permanently sealed, industrial ball bearing unit . . . the outer race locking pin . . . the ball retainer riding the inner surface of the outer race ring—and now Zone Hardening—all patented features!

SOME IMPORTANT SEALMASTER FEATURES

PERMANENTLY SEALED, SELF-ALIGNING BALL BEARING
. . . has felt-lined steel flingers rotating in labyrinth to prevent entry of dirt and to retain proper amount of lubricant (see 4).

LOCKING PIN AND PERIMETER DIMPLE
. . . prevents bearing from spinning in its housing and prevents fretting corrosion between housing and bearing, yet permits sufficient shaft alignment without seal distortion (See 5 and 6).

BALL RETAINER
. . . rides on the ground inner surface of the outer race ring (See 7), eliminates ball wear, trapping grease and preventing its churning in the bearing.

SEALMASTER Units are available in many special housings as well as in the complete standard line. Write us for full details on special units. Ask for a copy of SEALMASTER Catalog 845.

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Stainless Steel Platecoils in a large variety of standard sizes or standard single embossed Platecoils rolled to specific diameters as shown above are finding increasing use in the chemical and textile industries because they give five basic advantages in solving heat transfer problems.

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Platecoils heat faster than pipe coils because they have more prime surface in a given area. A 22" x 47" Platecoil has the same heat transfer surface as 32 feet of 1½" pipe which occupies approximately 30" x 60" of space. Platecoils' faster heating coupled with their unusually low maintenance cost give 50% savings in space and material resulting in faster heat transfer for heating or cooling problems for approximately 50% of the normal cost. It costs you nothing to see what Platecoils will do for you. Write for complete data on your problem today.

Your free copy of the Platecoil technical data manual is available when requested on your letterhead. Write for Bulletin No. P32

the drag roll. Hold the ends of the warp and tighten them to align them

3. Put a comb through the warp. Put the wooden frame on the comb and tie it

4. Leave 36 in. of yarn outside the comb.

To tie in the pattern:

1. Brush out a "hand" of ends from the warp and secure them in the machine

2. Brush out a hand of ends from the pattern and secure them temporarily

3. Bring small lease rods (replacements for large rods) from the lease through the ends

4. Clamp these ends to the carriage or top bracket of the machine

5. Place even tension on both sets of ends

6. Tie the warp. Watch the knotter to prevent doubles

7. Separate the knots and tighten the ends

8. Tie all the hands until the complete warp is tied.

What Type of Roll Covering Is Best?

Most of the 14 mills that commented on metallized take-up rolls are using them experimentally or in production.

The largest user of this type of roll covering has between 800 and 900 looms with the rolls metallized. It hasn't had any trouble with the rolls and likes them. Cloths woven are 1.60 denim and 3.60 chambray.

In another mill, only one roll has been metallized, and the mill has trouble with slippage on duck cloth when the cloth is doffed.

Abrasion marks on the cloth were not noticeable except in one mill, and this mill thinks that it would have trouble with abrasion marks on its particular style of cloth if it used any roll covering except rubber covers.

Eight mills stated that their loom-fixers replace tin fillet on the take-up rolls while the rolls are in the looms. Three mills remove damaged rolls and re-cover them in a lathe.

Other types of roll covering used are:

1. Rubber on 13/1 cotton warps and 14/2 spun-rayon filling

2. Cloth-backed emery fillet covering, 1½ in. wide, No. 36 grit, on cotton sheetings.

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- More than 20 other efficiency improvements—see this remarkable new RIDGID "500" at your Supply House!

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Carding 3-Den. Nylon

(*Continued from page 115*)

cylinder setting and a 0.029-in. setting on the bottom plate. The idea was advanced that a more open bottom plate would permit the fibers to stand up higher on the cylinder surface and in the transfer of the stock from the cylinder to the doffer.

To check this idea, a test was conducted in which the 0.022- and 0.029-in. clearances were compared with 0.022- and 0.068-in. clearances. The results indicate that the conventional setting of 0.022 and 0.029 are best for sliver evenness. These settings gave a sliver variation of 9.1%, while the wider settings gave 12.55% variation. Total strippings were about the same.

With These Card Settings Production Reached 23 lb. per Hr.

With the selected settings shown on the accompanying diagram used throughout the card, a series of tests was run to determine the effect of production rate on sliver evenness and total strippings.

Varying the delivery from about 12 through 18 lb. per hr., with doffer speeds of 10 through 15 rpm., produced only minor differences in sliver evenness or total strippings.

Comparative results for three doffer speeds were:

Speed	*Total waste*	*Variation*
10 (rpm.)	0.325 (per 7 lb. carded)	12.9 (%)
12	0.333	12.2
15	0.333	13.3

At the time these experiments were conducted, the card was dull and needed grinding; however, since the objective was to show only relative differences, this condition of the card was not detrimental to the over-all comparison. Sliver evenness in the range of 13%, produced in this test, was improved after grinding; and when the doffer was run at 20 rpm. (approximately 23 lb. per hr.), the sliver evenness was 10%, with total strippings of about 0.23 lb. per 7 lb. carded.

This test indicates that if the card is in good condition and is set properly productivity can be increased with a relatively small effect on sliver evenness and total strippings.

Other changes are necessary in order to operate the card at higher production rates. Each time the doffer speed is increased, it is necessary to lower the tension on the card web. The reason for this change is the same as discussed previously with regard to the fancy roll: tension on the fiber during carding temporarily removes crimp

Always Uniform

Precision is never an accident. Unvarying quality must be put there by the maker . . . whether it's in Victor Mill Starch, bolts or screws.

Mill men know that Victor's uniformity shows up in better penetration, stronger warps, greater smoothness, fewer slashing problems.

That's why both Victor and the Keever man are known as "The Weaver's Friend."

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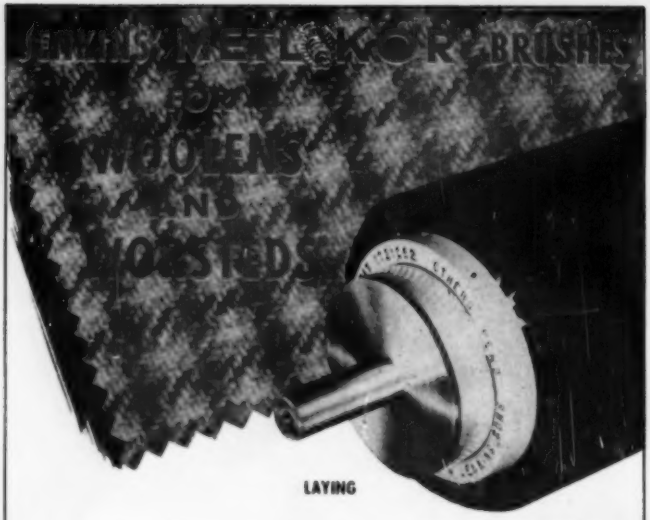

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One of the most important factors in achieving top quality and peak performance in the manufacture of woolens and worsteds is the use of the right brush, correctly designed and constructed. The Jenkins' METLKOR brush for the woolen industry is just such a brush, developed out of three-quarters of a century of experience.

Specifically designed for processing these fabrics, the Jenkins' METLKOR brush will not sag, split, crack or get out of alignment. True-balanced and uniformly tufted to give uniform production, this brush—with any desired bristle on permanent metal core—will outlast other brushes many times while surpassing them in efficiency.

Leading textile machinery manufacturers for years have been using efficient Jenkins' METLKOR BRUSHES as an integral part of their equipment.

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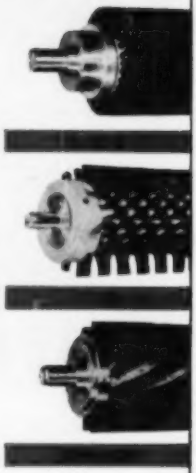

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Three-Quarters' Century of Pioneering Brushes for Industry
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that tends to return when the fiber is relaxed. In the return, the web is tightened. It therefore becomes necessary to lower the tension on the web. High web tensions, a common fault in many mills, are recognized by the shaggy edges and uncontrolled drafting of the web.

The doffer comb must be carefully set in position slightly above the center line of the doffer. The setting is increased as the doffer speed is increased. The adjustment of comb speed shown on the combined settings chart was determined from visual observations of the web.

Doffer-to-Cylinder Setting Can Reduce Strips

The doffer-to-cylinder setting influences both sliver evenness and total strippings.

Comparative results for three settings were:

Setting	*Strippings*	*Variation*
0.005(in.)	0.278(lb.)	10.7(%)
0.007	0.338	11.2
0.010	0.322	12.7

The 0.005-in. setting definitely showed improved sliver evenness and less total strippings. The over-all increase in strippings with the more open settings was attributed mainly to an increase on the cylinder. This increase indicates that a wider setting gives a poorer transfer of stock from the cylinder to the doffer. As a result of this test, a 0.005-in. setting was selected as the best.

Most Significant Test

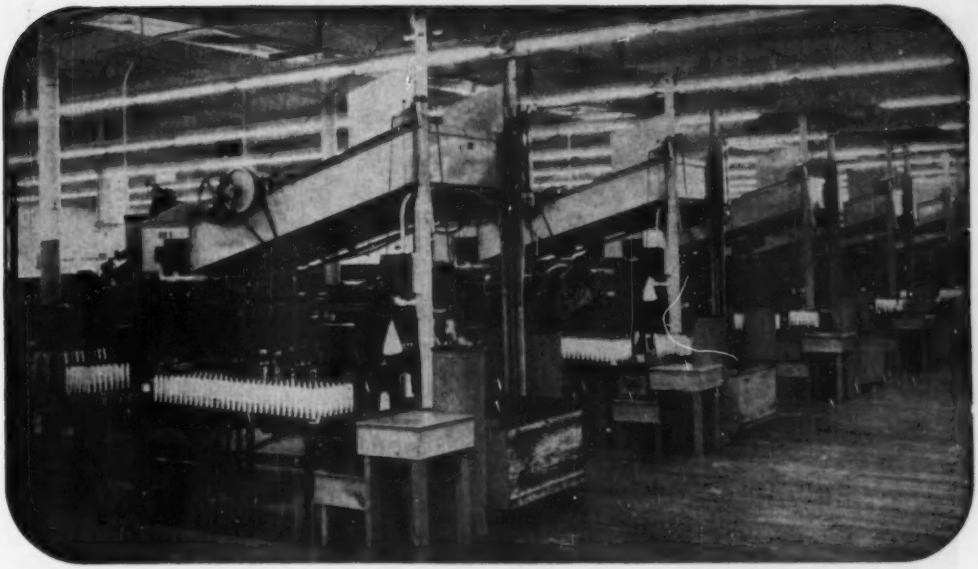
The most significant test conducted during the entire project involved the best card settings and speeds (shown on the accompanying diagram) selected from the various tests. With this information as a basis, a series of tests was conducted to determine (1) the rate of build-up of strippings and (2) the effect of sliver evenness on the carding cycle (from stripping to stripping).

The card was operated 1, 3, 8, and 20 hr., delivering in each test 7 lb. per hr. with a flat speed of 1.67 per min. At the end of each of these periods the card was hand-stripped, the strippings were weighed, and the sliver evenness was determined.

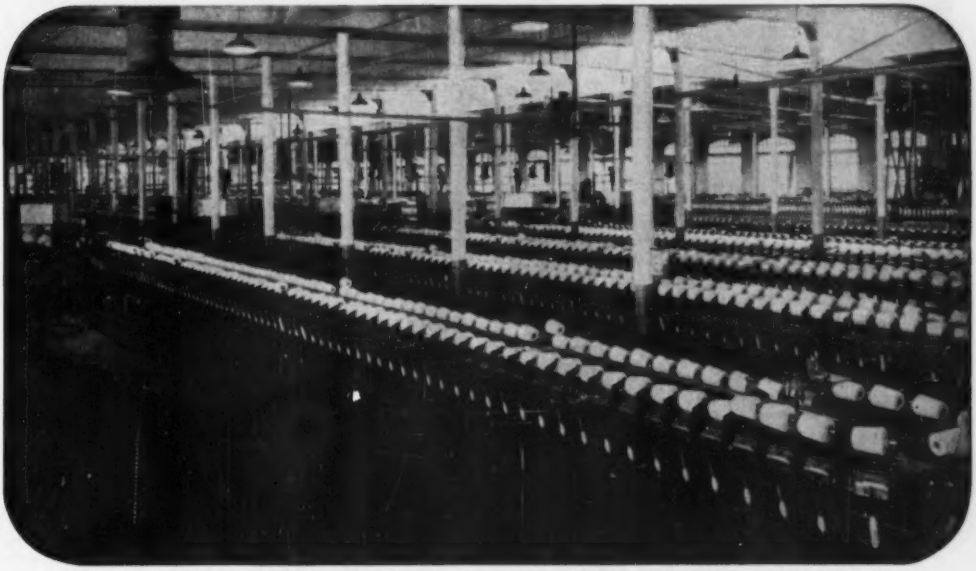
Results of these tests were:

Test	*1st hr.*	*3rd hr.*	*8th hr.*	*20th hr.*
Strips (lb.)				
Flat	0.12	0.21	0.61	1.41
Cylinder	0.08	0.11	0.12	0.17
Doffer	0.08	0.09	0.10	0.11
Variation(%)	9.5	8.1	10.0	7.8

A significant thing about the results



Winding a better weaving loom bobbin that improves fabric quality, Abbott Automatic Quillers offer the lowest winding cost in the automatic winding field. One operator can maintain a steady production load of from 1000 to 2000 wound bobbins per hour.



With the Abbott Automatic Cone or Cheese Winder, one operator, from a seated position, sets full bobbins in a rotating magazine and doffs full packages, maintaining a steady production of from 800 to 1000 bobbins wound onto packages per hour. It's the low-cost installation for efficient twisting, warping, or sale yarn package winding.

ABBOTT MACHINE CO., INC.
WILTON, NEW HAMPSHIRE
SOUTHERN OFFICE, GREENVILLE, S. C.

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Wrap up *all* your cleaning problems in one package and hand them over to your Fuller Industrial Representative. He is a cleaning expert who brings you technical assistance on what's best for your *every* cleaning need . . . for floors, walls, woodwork, windows, furniture or equipment. And he is backed by a modern research laboratory constantly checking, testing and improving to make sure that you get the finest brushes, mops, waxes, polishes and cleaning compounds that money can buy. To ease *your* maintenance burden, call your nearest Fuller Industrial Representative, or write.

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obtained is that over the entire period the sliver evenness remained excellent. Also, the rate of build-up of strips on the cylinder and doffer was quite slow. In this test, as much or more strips accumulated on the cylinder and doffer in the first hour than in the following 19 hr.

These results show that the 8-hr. stripping cycle practiced by many mills may not be necessary if the card is adjusted according to the settings shown on the diagram or under other possible improved conditions.

These tests show that careful adjustment of the card greatly improves sliver quality and total strippings. Many mills have taken advantage of the information developed in this project to increase productivity, improve quality, and reduce waste.

Pointers for Supervisors

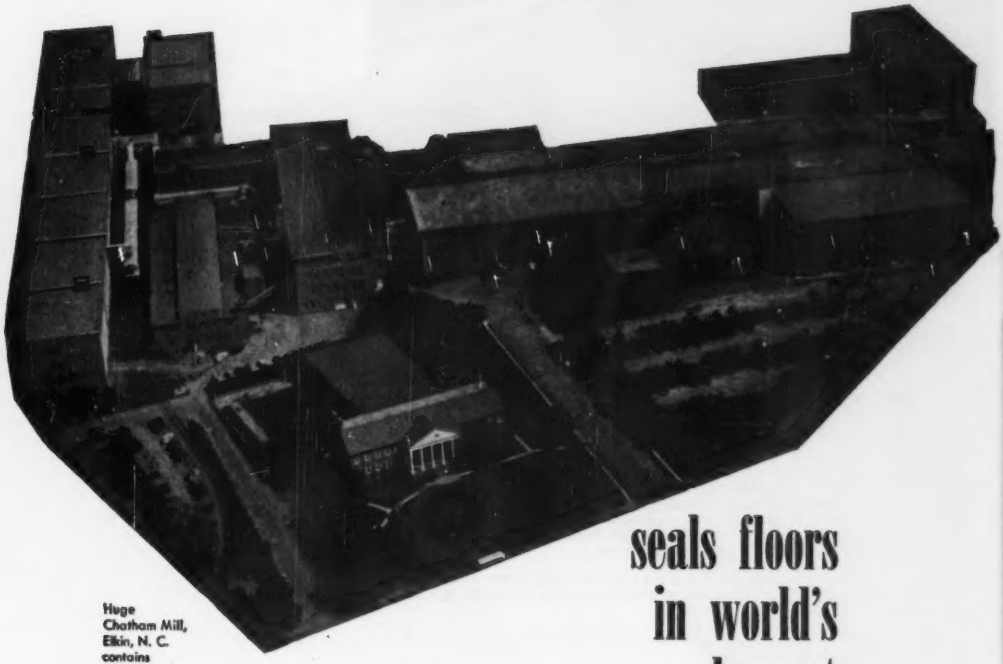
(*Continued from page 169*)

A third objective is described as the need "to advise him as to company requirements pertaining to hours, discipline, incentive plans, safety regulations, and other rules and procedures." Think back to the time you went to work and you will realize that such problems can best be answered in the day-by-day working on the job. Of course, here again the personnel staff can help the foreman by giving the worker all of this material in capsule form. The information can be in a rule book, or perhaps during the induction program the rules can be impressed upon the worker by working out with him the reason for those rules.

I have recently seen, for example, cartoons illustrating rules. With the personnel man acting as leader, new employees figure out the rules so illustrated and the reasons for having such regulations.

General rules and procedures can certainly be given the new employee by the staff men. The concrete illustration of those rules must be the supervisor's job. Consider the explanation of a formal incentive system. Only as a specific problem arises in figuring pay can the general principles outlined by the personnel man be translated into the worker's own specific problems. That's the supervisor's job that he simply cannot turn over to any staff man from the personnel department. The same is true for rules and regulations without which a plant cannot operate. The "thou shalt nots" can be stated clearly, but only the foreman can apply these regulations to a specific incident and thus illustrate his point. Furthermore, the new worker reaches a saturation

SEALATEX



Huge Chatham Mill, Elkin, N. C. contains 24 acres of floor space.

seals floors in world's largest blanket mill

"We have used a considerable amount of Sealatex in our plant. It has done a fine job of adding life and service to our maple floors, while reducing cleaning time and maintenance.

"We also appreciate the excellent service given by your field men."

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Vice President
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MYCO PRODUCTS

SOUTHERN RAILWAY SYSTEM
Builds South's Largest Freight Yard in the BIRMINGHAM DISTRICT

Birmingham's position as the South's transportation and distribution center has been reinforced and vastly amplified by the recent completion of the Southern Railway System's new multimillion dollar Ernest Norris freight classification and forwarding yard. This newly-opened freight yard is the most modern in the world and largest in the South. It affords complete facilities of the very latest "push button" type for rapidly receiving, classifying and forwarding cars and for running repairs to Diesel locomotives and cars.

The new yard occupies a 500-acre tract, six miles from downtown Birmingham. It contains 92 miles of track, capable of handling 2,533 cars at one time.

Speaking recently in Birmingham about this great development, President Harry A. DeButts said:

"This is one of the most important projects ever undertaken by our railway. Construction of the new yard was dictated by the heavy increase in traffic volume in the Birmingham area and the surrounding Southeastern section of the U. S. A. It is an expression of our confidence in the continuing industrial development of the fast-growing Birmingham district. This new yard now makes available some very choice industrial sites on our Birmingham property. Information about these will be furnished on request."

★ ★ ★ ★ ★ ★ ★

The Birmingham Committee of 100 or any of the undersigned members of its Executive Committee invites inquiries from those interested in the establishment of industries, warehouses or branch offices in the central Birmingham district, from which growing Southern markets can be served most rapidly, advantageously and economically.

BIRMINGHAM COMMITTEE OF 100

1914 Sixth Ave., N., Birmingham, Ala.

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For more information, write direct or use Reader Service post card.

point quickly during an induction program, and the supervisor must take over when the man gets to his department.

The handbook suggests as a fourth objective "to insure that the company has fulfilled its obligation to the employee during the initial probationary period in terms of placement and adequate information." This is another way of saying that after a reasonable length of time there should be a follow-up to see how well the worker was actually inducted. It would seem to me that in gaining this objective the foreman can rely upon the personnel staff workers. A follow-up interview with each new worker should make it possible to see that the man has really adapted himself to the job. But even here, unless there is full cooperation with the foreman, the staff man will be lost. The personnel worker can discover whether the new employee knows what the rules are and about the benefits available, but only the foreman can evaluate from the company's standpoint whether the worker has been placed on the right job.

The final objective listed is to "ascertain whether the employee is adequately performing the job during the probationary period before he acquires status on the job." Obviously, all the personnel department can do to help meet this objective is to keep the records for the foreman. This is a matter of rating that I discussed in an earlier article, but, as I said there, only the supervisor can do the rating correctly, and then only if he knows how. He can call upon the staff for aid in preparing forms that will help him avoid some of the pitfalls of blanket judgments, but in these days, particularly in an organized plant, getting rid of an incompetent worker is not always easy once the probationary period is over. Although he may get by the first objectives of induction without doing his part, no foreman can be successful if he fails to meet this fifth objective.

These are the five objectives listed in the *Handbook*. Another important one could be added. It is to acquaint the worker with the work of his new employer and show him where his job fits into the whole production process. A spinner may not realize just why slubs in the filling make bad cloth because she has never seen cloth woven, and a weaver who has never seen a finishing department may not know the problem of waste that arises when thin places have to be cut out of cloth. Recently a worker was temporarily placed on inspecting and told what to look for. She inspected some work she herself had done the day

simpler
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safer
newer

The above pattern card shows a selected group of Benzofix Dyestuffs on rayon having minimum ratings of

Light	7-8
Washing	3-4
Perspiration	5
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Our salesmen are presenting this card to dyers of rayon who are interested in fast colors.

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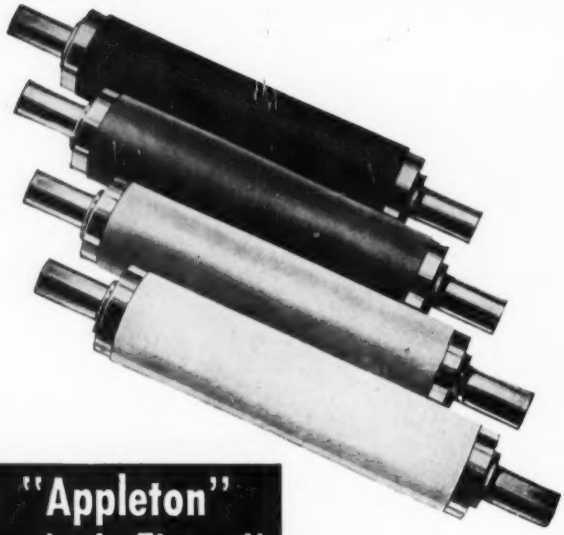
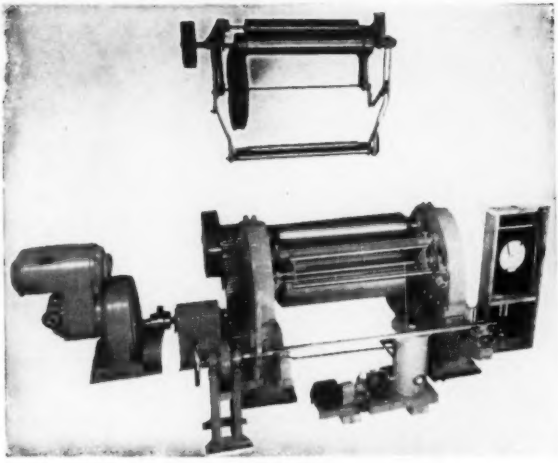
. . . Calender Rolls, both new and refilled, of all types, from America's most complete line of filled rolls, well deserve to be called "America's Finest" because of their long life and better performance.



We've Named These "Appleton" --you'll call them "America's Finest"

. . . Two Roll Embossing Calender . . . compact, ruggedly built . . . designed to operate with a minimum of power and maintenance . . . offers these features — 10″ Bored Steel Roll, 20″ APPLETON Special Wool Felt Roll, Air Pressure Cylinder with Recording Chart, Anti-Friction Bearings, Force Feed Oil Lubrication, Ceiling Folder, Direct Motor Drive with Variable Speed. Truly "America's Finest".



APPLETON MACHINE COMPANY
APPLETON
WISCONSIN

Custom Builders of Textile Finishing Equipment - Friction Calenders
Silk Calenders - Schreiner Calenders - Rolling Calenders

before and turned it down. No one had ever explained to her, she said, what the inspectors looked for. Surely she was a better worker when she went back on her regular production job.

Cooperation Is Important

In this phase of induction, cooperation between personnel and the foreman is essential. The staff department may have to conduct the plant tour because of time limitations. If all supervisors actually know the reasons for the tour, they can help make the new card hand conscious of his importance for good work in spinning, and the spinner will have a better understanding of why proper work in her department is essential for good weaving.

Always the supervisor! When does he think I get my work done? Forms to fill out! Training to do! Schedules to meet! Production problems to solve! Grievances to hear! And now orienting the new worker to his job!

It's all true. The foreman simply can't dodge these responsibilities if he is to do a good job of supervising the work of others because that's what supervising the work of others means. More and more, those higher up in the production line are recognizing that good foremanship is an exacting job and have cut down the number of people under one person's supervision. No matter how many he supervises, however, no foreman can expect to turn over to any staff member the job of making the new worker feel at home, ready to take over his place on the production team.

Variable-Speed Drives

(*Continued from page 103*)

Wash and Oil Filters

In order to keep the contactor panel and the generator housed in the main control box free from dust and lint and to keep them cool, regular cleaning schedules of the air-filter cartridges should be carried out. These cartridges must be well cleaned, dipped in an oil solution, and allowed to drain to get the excess oil off.

Every 2 mo. we have a man wash the air filters with a stream of water from a regular garden hose. He then dips the filter in a vat of Humble's Technical Oil #65 and lets the excess oil drain off before the filters are installed again in the control cabinet.

The variable-speed drive has one important feature that is helpful to most plants where the service of a good electronic engineer is not avail-

YOU BENEFIT 3 WAYS

when you put looms on these vibration absorbing

ISOMODE® TEXTILE PADS

1. EASIER, FASTER LOOM INSTALLATION...

Isomode® Textile Pads work on any type of flooring. No need to bolt to or damage floor. Simply cut the required area of Pad and place under loom legs. Looms bed themselves down on these resilient Pads and stay put even without cementing. This also makes relocation of equipment anytime an easier, cheaper job.

2. QUIETER MILL...

Test and mill applications have demonstrated that Isomode Textile Pads, despite their low cost, do one of the best jobs of absorbing vibration normally transmitted through legs to floor. These Pads can help you reduce noise levels, increase comfort.

3. LESS LOOM MAINTENANCE... Looms "float" on Isomode Textile Pads. Since the equipment is not rigidly mounted, there's less stress and strain on machines. You thereby not only save maintenance time and labor, but also help equipment last longer.

Made of DuPont Neoprene, the Pads resist oil, water, aging. Get more details. See how easy it is to isolate vibration and save money with Isomode Textile Pads.

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THE MB MANUFACTURING COMPANY, INC.
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Please send data sheet containing more information on Isomode Textile Pads and how to install them easily and quickly. Send price sheet and delivery data.

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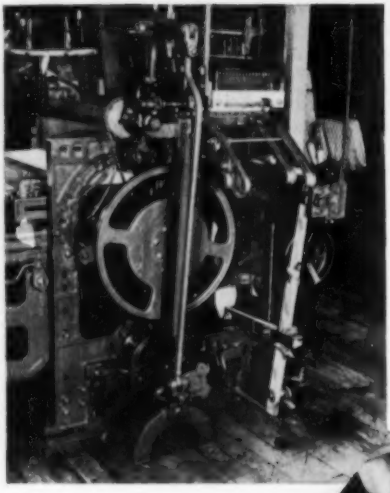
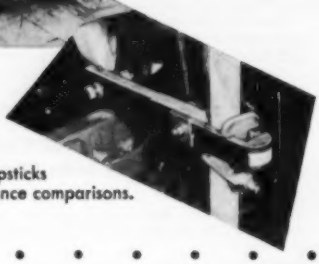
HEIM *Unibal*

SWEEPSTICK

After three years of use by mill owners and loom operators, performance records indicate that the Heim Unibal Sweepstick lasts longer, delivers smoother pick action, and eliminates elongated stud holes, readjustment of power stroke, and resulting kinks and loops in cloth.



Detail of loom and close up view of Heim Unibal Sweepstick assembled on Crompton & Knowles S-6 loom.



You can cut down-time due to sweepstick failures to a minimum — install Heim Sweepsticks on your looms.

Order just one pair of Heim Sweepsticks now and make your own performance comparisons.

SWEEPSTICK DATA AND PRICES ON REQUEST

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

able: that is, that the drive is arranged in four major parts—the motor, power unit, electronic panel, and the contactor panel. In the event of a break-down of any of these units, the service agency will immediately ship a replacement for it and the defective unit is returned to the factory's electric service shop.

Spare parts or kits should be kept on hand at all times to keep your electronic control panel properly serviced. Since the average life of the tubes used is around 2,000 hr., it is always advisable to keep spares of each kind.

Vinyl Coatings

(*Continued from page 149*)

Avoid Iron Kettles

It is recommended that the kettle used for making the vinyl solution be of stainless steel or glass or that it be enamel-lined. In iron equipment, dissolved iron salts exhibit thixotropy and the resin solution tends to gel.

Mobile solutions at 120° F. can be obtained in concentrations of about 12% with a high molecular weight polymer such as Geon 101. Lower molecular weight copolymers may be used in concentrations as high as 25%. The solutions tend to gel on cooling. If a gel is formed, it can be broken easily by mechanical stirring and/or reheating.

Many manufacturers make a stock solution of the resin in solvent. The coating compounds are then prepared in smaller mixers as they are needed by taking the required amount of the vinyl jelly and adding the other compounding ingredients.

Here's a Good Clear for Prints

As a starting point, the following is suggested as a compound for a 2- to 3-oz. coating suitable for a clear coating on printed material for upholstery and similar uses:

Vinylite VYNS (vinyl chloride-vinyl acetate copolymer)	100
Methyl ethyl ketone (solvent)	455
Dibutyl tin dilaurate (stabilizer)	2
Dioctyl phthalate (primary plasticizer)	35
Dioctyl sebacate (low temperature plasticizer)	8
Clear wax (to improve surface feel)	1
Methyl violet (bluing color)	0.001

Several manufacturers offer vinyl solutions already compounded for coating. Considerable equipment is necessary to make the solutions, and if the operation is small, it may be more practical to buy the prepared solution.

For solution coatings, copolymers of styrene and butadiene are also of interest. Goodyear's Pliolite S-5 is

★

Versatile Multi-purpose WOOL-WASHING MACHINE by SARGENT

for SCOURING BLEACHING ACIDIFYING

SARGENT Wool-Washing Machine (front view—feed end)

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SARGENT Wool-Washing Machine (rear view—delivery end)

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Rust-proof, acid-resistant STAINLESS STEEL throughout, modern Heliarc Process welded... SARGENT'S new ball-bearing rake suspension design eliminates supporting shafts running through bowls and the attendant danger of leakage... free and open access to bowls gained by placing rocker arms, balance weights and connecting rods *above* bowls, out of operator's way... all moving shafts mounted on ball or roller bearings... individual motor drives... stainless steel bowls come equipped with flow meters, temperature controls, automatic dump-valve systems and pneumatic-loading squeeze rolls... capacity from 1,500 to 5,000 pounds greasy wool per hour, depending on size and number of bowls in train.

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PRODUCTIVE DOLLARS FOR INDUSTRY

AETNA INDUSTRIAL CORPORATION

Announces Completion of the Acquisition of

GLOBE KNITTING WORKS

Grand Rapids, Michigan

Founded 1888

(As of Oct. 17, 1952 known as MODERN GLOBE, INC.)

—Through purchase of 97.2% of its common stock from over 762 stockholders

★ ★ ★

The acquisition of Globe Knitting Works (now known as Modern Globe, Inc.) by Aetna Industrial Corporation further strengthens the Group of Aetna-operated organizations and marks the third company acquired by Aetna Industrial in the textile field alone . . . The other two textile companies are the Oscar Heineman Corporation, Chicago, Illinois (founded in 1893) and Champlain Spinners, Inc., Whitehall, New York (founded in 1891) . . . Many benefits by integrated operation are expected to flow to all three companies from this single ownership.

Modern Globe, Inc., as it is now known, is a long-established corporation—founded some 64 years ago. During that period it has maintained an unblemished record, with excellent bank and trade relations and customer friends.

It has a high reputation for producing a fine line of *men's, women's, boy's and children's knitted underwear* and allied products, distributed in almost every state in the Union . . . Aetna Industrial will make every effort to maintain and enhance this enviable reputation.

In line with Aetna Industrial's policy, most key operating personnel will be retained, augmented wherever necessary, and all facilities of the parent company placed at Globe's disposal to achieve maximum results in manufacturing, management, distribution and sales.

Action is now being taken to broaden the overall scope of Modern Globe, Inc., to build a more effective and more profitable operation. New ideas and improvements in products and packaging are already under way, with an organized aggressive sales drive and national advertising campaign now in contemplation.

Walter W. Weismann,
Chairman, Aetna Industrial Corporation

★ ★ ★

Aetna Industrial Corporation, an old established owning-operating company, is acquiring and expanding companies in the textile, machinery, lumber, building supplies, rubber goods, hand tools, light metal, asphalt, concrete, construction and other varied industries. Aetna Industrial desires to acquire, for cash, additional sound, going companies or to effect mergers. Not less than $200,000 should be involved . . . preferably upwards of $1,000,000. We are not brokers ...we purchase for our own account only...decide quickly, appraise fairly, pay *all cash* promptly. Confidential negotiations assured. We also participate in . . . expand or reorganize businesses. (Brokers protected.)

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565 Fifth Avenue, New York
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Capital & Surplus Over $5,000,000. $10,000,000 Capital Available.

representative of products of this type. Such products are soluble in aromatic hydrocarbons. Tough, durable coatings with good chemical resistance may be made from polymers of this class.

Latices—Stability Is the Problem

The techniques of compounding latices are quite different from those previously discussed. Latices are colloidal dispersions; and all materials must be added in water solution, emulsion, or slurry. The basic ingredients and their effects are much the same; but emulsifying agents, thickening agents, and protective colloids are also necessary for most of the work. The majority of the available vinyl latices require fusion after coating. A few of these latices form continuous films with fairly good physical properties by simple evaporation of the water.

These latices consist of copolymers of vinyl chloride-vinyl acetate, vinyl chloride-vinylidine chloride, and vinyl chloride-acrylonitrile. They are produced by emulsion polymerization and by special techniques and stabilized as synthetic latices. The solids concentration of these latices is about 50%.

The first consideration in the compounding of the latices is stability of dispersion. Latices are relatively stable but may be coagulated if improperly handled. The pH of most of the latices is from 8.5 to 9.0, and this degree of alkalinity must be maintained. If a clay slurry has a pH of 7.0, an ammonia or alkaline buffer must be added to bring the pH to 8.5 before mixing. Ammonia may cause discoloration with some latices.

Too rapid agitation will cause coagulation of the latex. The use of high-speed mixers for blending the ingredients is not recommended. A paddle churn or other mixer with mild agitation is best.

Dispersions that contain coarse particles may cause coagulation or contribute to instability. The better the dispersion of the compounding ingredients, the more satisfactory will be the compound and the resulting coating. It must be kept in mind that the compound must be stable enough to stand up during the coating operation. For example, a breakdown could occur as a result of the agitation that takes place as the material rolls in front of a coating knife.

The use of strong electrolites, organic solvents such as alcohol or ethyl acetate, or dehydrating agents will cause coagulation. Dispersions that carry a positive charge may cause precipitation and should be avoided.

The plasticizer should be prepared

Remember how you longed for air conditioning last summer?

You swore you'd never go through another summer without air conditioning. Now—today—is the time to do something about next summer. Here's why:

Your Westinghouse Contractor isn't rushed now. His men can install your new unit faster, better . . . without overtime. He will save you money. And he will do the work when it suits *you*—without disrupting your business.

It will pay to select Westinghouse equipment because:

Westinghouse costs less to operate. Its refrigerant-cooled motor saves on electric power and upkeep. Its hermetically-sealed design means less maintenance, fewer service calls.

Westinghouse gives better performance. Only Westinghouse designs and builds all components. This means smoother operation and longer life, because all parts have been precision-built to work together.

Westinghouse has a full equipment line. Whatever you require, from 2 tons up, a Westinghouse system will match your needs. Only Westinghouse offers so complete an air conditioning line.

Interested? Want to do some advance planning? Then send for the Westinghouse Planning Guides. Or better still, call your local Westinghouse Air Conditioning Contractor for a free estimate. He'll be glad to help you. He's listed in the Yellow Pages of your classified directory.

YOU CAN BE SURE... IF IT'S

Westinghouse

AIR CONDITIONING

J-40285

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☐ Send me the "Planning Guide for Industrial Air Conditioning".

☐ I want a free estimate of the cost of air conditioning my premises.

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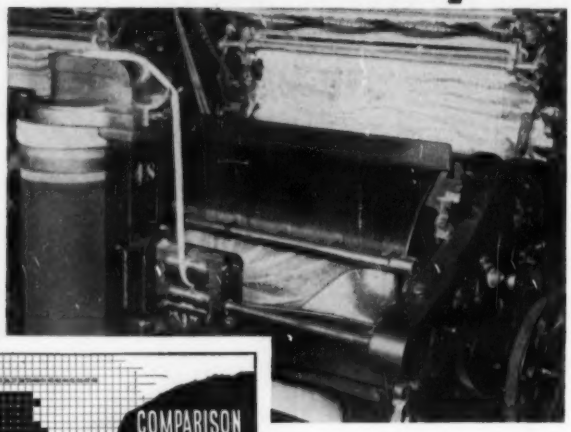
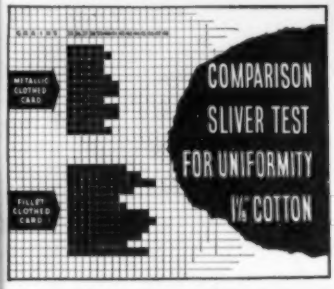
IMPROVE sliver uniformity...





by RECLOTHING YOUR COTTON TYPE CARDS with PROCTOR METALLIC WIRE

When cotton type cards are clothed with *Proctor Metallic Wire* the sliver obtained is uniform in weight and quality. Because of the self-stripping feature of the clothing, the card is always clean resulting in a continuous uniform sliver. With conventional card clothing the card must be stripped frequently. After stripping the clothing immediately begins to fill up and weight and quality of the sliver begin to vary.

In a comparison sliver test for uniformity 1⅛ cotton—shown graphically—the variance in the weight of the sliver from the fillet card is quite obvious—as against the uniformity of the sliver from the metallic clothed cards.

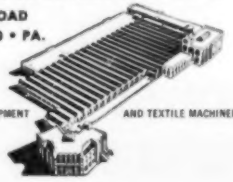
A new Proctor sound, color movie entitled, "Modern Cotton Carding" clearly demonstrates the advantages of Proctor metallic clothing. It also describes the service offered by the Proctor reclothing branches conveniently located in textile centers. It is in these shops that conventional cotton cards can be quickly reclothed with Proctor Metallic Wire.

Write today for Bulletin #381, "Modern Cotton Carding" and learn more about Proctor Metallic Wire and Proctor reclothing service.

Branches: Newton Upper Falls, Mass. Cohoes, New York
Chicago, Illinois Spartanburg, South Carolina

PROCTOR & SCHWARTZ • INC •

705 TABOR ROAD
PHILADELPHIA 20 • PA.



MANUFACTURERS OF INDUSTRIAL DRYING EQUIPMENT AND TEXTILE MACHINERY

as a concentrated emulsion. The pH of the emulsion must be at least 8.5. It is essential that it be an oil-in-water emulsion. Non-ionic dispersing agents are the most satisfactory.

Here's a Sample Emulsion

To obtain a fine emulsion free from foam, the use of a colloid mill or homogenizer is desirable, since even with carefully controlled conditions it is difficult to be sure of a complete emulsion of the oil-in-water type by simple stirring. A suggested formulation for a dioctyl phthalate dispersion would be:

Water	45
Dioctyl phthalate	55
Oleic acid	5
Morpholine	2

Add the morpholine to the water while stirring it in an Eppenbach homogenizer mixer. Dissolve the oleic acid in the morpholine-water mixture slowly, agitating the mixture. If it is desired to use a colloid mill or other homogenizer, follow the above instructions and prepare a coarse emulsion in an ordinary mixer before processing is begun.

Most pigments and fillers can be used without difficulty in the synthetic latices. However, certain compounds of polyvalent metals are not very satisfactory. Materials such as calcium sulfate and zinc oxide should be avoided. The dispersion is made in water with the use of a wetting agent, and it should be ground to assure the breakdown of all agglomerates. A ball mill, homogenizer, or colloid mill may be used.

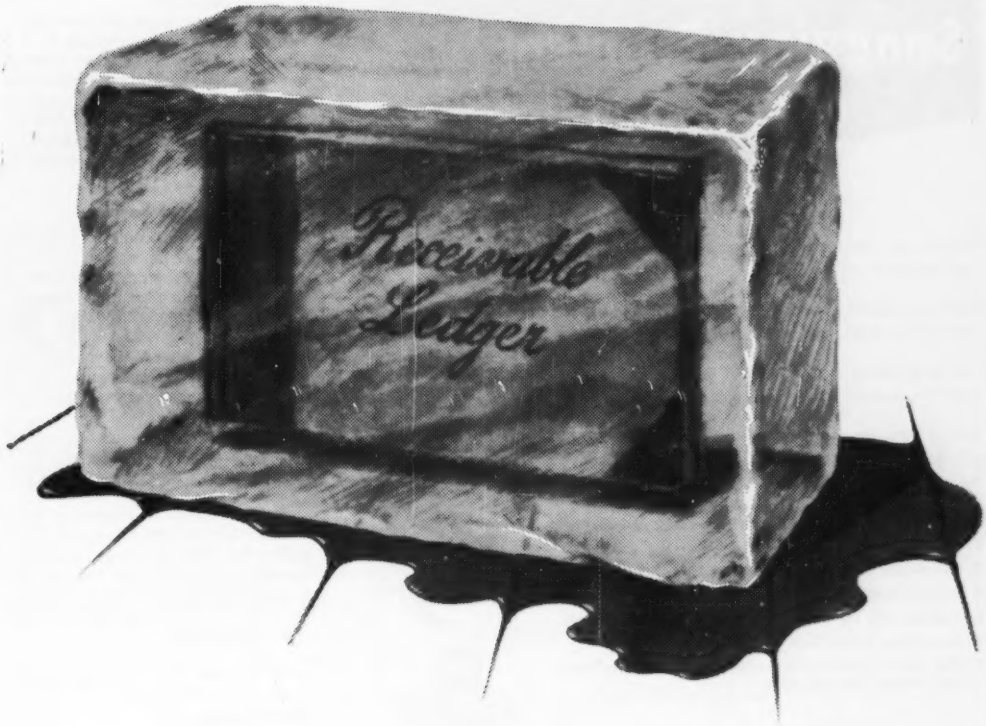
Darvan, Triton NE, sodium metaphosphate, alkaline casein solutions, and many other commercially available emulsifying agents may be used. Many of the dispersants, such as alkylaryl sodium sulfonate, have not proved satisfactory for the emulsification of plasticizers, however.

A satisfactory recipe often used is:

Titanium dioxide	50.00
Sodium metaphosphate	1.50
Water	48.50

As the viscosity of the latices is generally too low to coat satisfactorily, addition of a thickening agent to control the viscosity is necessary. Such materials as casein cut in ammonia, methylcellulose (15 cps), and ammonium alginate may be used for thickening.

Combinations with other types of synthetic latices also have merit. Where it is desirable to develop a strong, pliable coating with a dry surface, it may be advantageous to use combinations of vinyl latex with the Hycar OR type of synthetic rubber. This combination tends to plasticize



Can you make a frozen asset liquid?

As a business grows, dollars tied up in receivables constantly increase. This portion of your capital is actually a frozen asset.

Many forward-looking firms have reversed the effects of this freeze by utilizing the financial services of William Iselin & Co., Inc.

These services make all sales cash transactions. Thus you are able to keep all your capital working *full-time* to produce new goods for profitable sales.

WILLIAM ISELIN & CO., INC.

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FOUNDED IN 1808

Do You Have a Snagging Problem with Synthetics?

Plastics can solve many snagging problems for the synthetic yarn processor and user.

Laminated plastics provide a hard non-porous surface, take a high polish, and resist wear and corrosion.

Our engineering staff is anxious to work with you in adapting plastics to eliminate your snagging troubles.

Shown here are some of our current applications of plastics to help the synthetic yarn processor improve the quality of his product.

1 & 1a—Draw Off Caps for Nylon and Orlon Shipping Pirns
2—Take Up Bobbin Redraw Cap
3—Redraw Cap for Take Up Tube. Spring Type Fingers
4—Precision Built, Dynamically Balanced Plastic Winder
5—Headless Take Up Tube of High Density Laminated Phenolic
6—Nylon Sizing Cylinder Cap
7—Ring Twister Bobbins Built to Withstand Tremendous Crushing Forces of Synthetic Yarns

ENGINEERED *Plastics*
INCORPORATED
Gibsonville, North Carolina

For more information, write direct or use Reader Service post card.

the vinyl, and the required pliability can then be obtained with a minimum of liquid plasticizer.

Wetting agents in the dispersion also aid in obtaining adhesion to the fabric, since they insure better wetting of the fibers. Wetting agents are necessary if more than one coat is to be applied, since it is very difficult to obtain uniformity in application or in drying unless the surface tension is reduced.

Here's a Sample Latice

As in other compounding, there are so many types of latices available that it is not within the practical scope of these articles to give exact formulations. The following sample will serve as a guide, but it must be adjusted to the specific latex employed and the other necessary requirements. It is suitable for lightweight coatings.

Vinyl latex, 50% solids	51.50
Plasticizer, 58% emulsion	28.25
Pigment and filler, 50% slurry	15.25
Ammoniacal casein solution, 10%	2.50
Wetting agent, 15% solution	2.50

The compound is prepared by putting the latex in the mixer and then adding the other dispersions with slow agitation. The time and temperature required for fusion, if fusion is necessary, will be entirely dependent on the type of latex used

---

New Rings

(*Continued from page 116*)

than on a $\frac{3}{4}$-in. smaller ring of the conventional type. This fact may be explained by the design of the ring and the controlled lubrication that it has.

Other advantages that the mill reports include the all-important factor of cleanliness. The new rings don't get as dirty in the first place; and when dirt does accumulate, the rings are more easily cleaned. Greasy spots on yarn are almost a thing of the past now. Floors are cleaner, too, because less lubricant gets on the floor when frames are blown off.

The unevenness of 40/2 yarn at Boger & Crawford is now about 3% better on the average, read on the 100% scale of the Uster tester.

Ends down per thousand spindle hours are six less than before. It is likely that any new ring would have shown an improvement; however, the mill management thinks that the Herr rings are doing better than conventional ones would have done.

The increased package size has enabled the company to get along with

Celanese* Acetate

the fiber with the *well-balanced* performance characteristics

In an age of specialization, it is natural enough that many new textile fibers are developed, specifically to excel in some one special way.

Yet for most applications—for most end uses—the best fabrics require high *average* performance in many respects.

That is the essence of acetate's success in the textile field. It is an excellent fiber in each respect. For instance, acetate has:

- **good dimensional stability**
- **wonderful hand, fine loft**
- **cross dyeing versatility**
- **excellent wrinkle recovery**
- **resistance to moths and mildew**
- **thermoplasticity for pleats and moires**
- **uniformly good supply**
- **a very competitive price**

And acetate's outstanding asset . . . its ability to enhance the beauty of any fabric in which it is used.

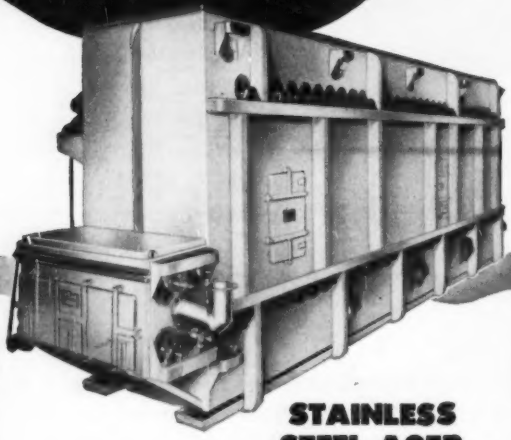
So in designing new fabrics and planning production—whether it be shantung type suitings, light weight cords, or dress crepes—consider all the performance angles, and see if acetate doesn't come closest to filling the bill.

Celanese Corporation of America, New York 16.

Celanese*

*Reg. U. S. Pat. Off. **ACETATE, one of the world's great textile fibers**

INVESTIGATE
Tower
TEXTILE EQUIPMENT



STAINLESS
STEEL AGER

The cost conscious textile man, concerned with the purchase and operation of production equipment, will find it to his advantage to contact Tower engineers. Tower engineers will consult with you on the design and installation of the finest in textile equipment — to meet your most exacting operational requirements.

Write for free booklet on Tower Textile Equipment

IRA L. GRIFFIN & SON
Charlotte 1, North Carolina
Southern Representative

Tower Iron Works
Established 1835
50 BORDEN STREET, PROVIDENCE 3, RHODE ISLAND

EVERY 8 HR. the rings are lubricated with a special oil furnished by the ring manufacturer. The oil is not thrown off; and the rings, yarn, frames, and room stay clean. Travelers are changed every 3 wk.

one doffer less on each shift per 28 twisters.

Winding cost is less also because one girl can handle 75 spindles now where she could take care of only 50 spindles before.

Gill Reducers

(*Continued from page 111*)

are pinned 21 pins per in., 21s wire, with the machine arranged for a draft of 8½ to 9. The end delivered weighs 50 to 55 grains per yd.

Typical Wool-Viscose Blend

Another layout for three operations of gill reducing, following the Pacific converter, would be similar to the following example. In this instance, the converted top is a blend of 40% 64s wool top and 60% viscose tow.

In the breaker operation, four ends of converted stock per side, each of 300 grains per yd., are fed in. The fallers are pinned 17 pins per in., 19s wire, with the machine arranged for a draft of 8. The delivered end is 150 grains per yd.

The intermediate operation has four ends per side fed in and, with a draft of 7, delivers 85 grains per yd. In this operation, the fallers are pinned 17 pins per in., 19s wire.

In the finisher operation, six ends per side are fed in. Arranged for a draft of 9, the end delivered weighs about 55 grains per yd. The fallers are pinned 21 pins per in., 21s wire.

Use of Longer Staples

There is a trend developing towards the use of longer-staple fibers. This trend is probably prompted by a change to the acceptance of fabrics made from synthetics, blends of synthetics, or blends of synthetics and

"Oh, that reminds me, B. J.— have you noticed that Swift's Soaps have excellent physical form?"

Take the textile men we know—just about everything seems to remind them of Swift's Soaps. While our illustration may be a slight exaggeration, reports from countless successful textile producers show a tremendous enthusiasm for Swift's Soaps. Here are some of the reasons why:

- **Swift's Soaps** are outstanding performers in dyeing, fulling, scouring and other specialized operations.
- **Swift's Soaps** feature the right soap product for *every* textile need.
- **Swift's Soaps** are characterized by excellent physical form . . . proper uniformity of composition.
- **Swift's Soaps** are backed by our years of specialized experience . . . readiness to apply our resources to help you solve your particular soap requirements.
- Swift's distribution points from coast to coast are strategically located to assure prompt delivery of these and other fine Swift's Soaps:

Vortex Flakes • 557 Flakes
White Ribbon Chips • Wool Flakes

Call **SWIFT** first for **SOAPS**

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Guides to...

HIGHER PROFITS

ARE MADE FROM

"LINDE" SYNTHETIC SAPPHIRE

Trade-Mark

By using sapphire at critical points in your equipment, you can cut yarn reject losses and maintenance costs to a surprising low. Sapphire has three properties that make these savings possible: (1) It takes and holds a high polish; (2) It's homogeneous (non-porous)—can't fray yarns; (3) It resists wear and corrosion remarkably well.

More and more technicians are changing over to sapphire textile guides to protect the quality of their yarns. More and more producers find that their yarns "drag" less over sapphire guides than over any other guides they have ever used. A large rayon spinner reports *twelve years* of trouble-free service from sapphire guides in locations where other guides failed in a *few months*. It all adds up to higher output, better quality, and lower cost per pound of yarn.

"Linde" synthetic sapphire materially increases the life of your guides. Let us show you how. We'll be glad also to help you with the design and testing of standard or special sapphire guides for your plant.

Write today to the Synthetic Crystals Department.

LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

The term "Linde" is a registered trade-mark of Union Carbide and Carbon Corporation.

wools. So-called "worsted-type" fabrics made from these synthetics or blends usually have yarns spun from 2½- to 4½-in. staple, 1.5 to 5 den.

If these materials are carded, one or two processes of gilling, a French or rectilinear comb, and usually three operations of gill reducing follow.

If synthetic tow is processed on the Pacific converter, it is followed by one or two heavy-type double-delivery gill boxes. For the next operation, a growing tendency seems to favor the use of a French or rectilinear comb before the materials can be passed on to the three remaining preparatory gill-reducer boxes.

E-Z Mills

(*Continued from page 126*)

must handle. On flat-knit work (80-end workload), the knitter doffs about four times during the shift. On heavyweight rib knit (120-end workload), the knitter doffs about twice during the shift. On lightweight rib knit (144-end workload), the knitter doffs about three times every two shifts.

The more times the knitter must doff, the fewer machines he can attend. The workloads are worked out so that they are more or less equal regardless of the number of machines operated or the number of the yarn used.

Machines Are Grouped

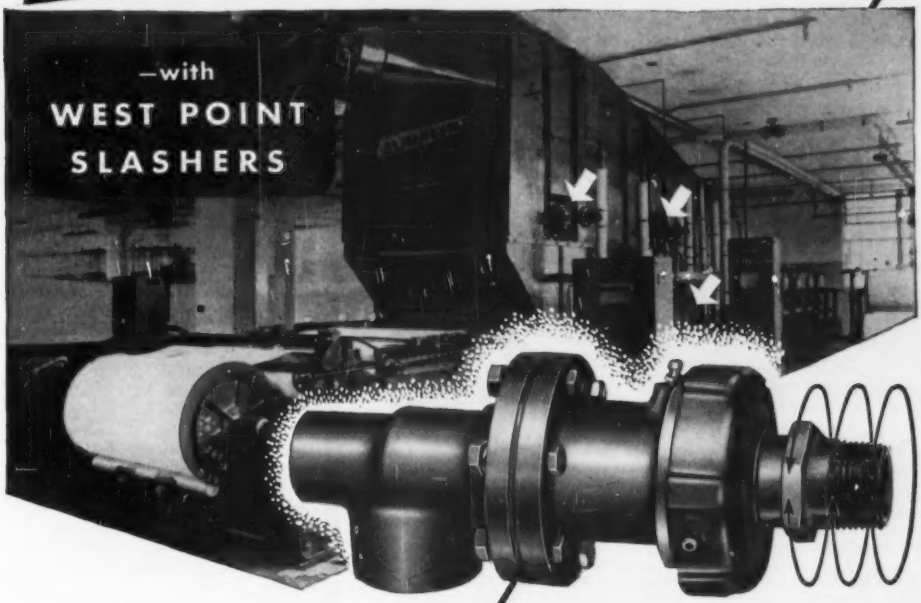
Knitting machines using the same yarn are grouped to minimize yarn errors and make fabric handling easier. Another reason for grouping machines is to lessen the lint problem.

Heavyweight rib develops about twice as much lint as lightweight rib, and flat knit (circular machines with only the cylinder needles) develops about four times as much lint as the lightweight rib and twice as much as the heavyweight rib. So by grouping the knitting machines, the light lint producers are not subjected to lint from the heavy producers.

The knitters at E-Z Mills are assigned particular machines by number. This method makes it possible for each knitter and fixer to become familiar with the peculiarities of his machines.

E-Z Mill has a rule that no idle machines shall remain on the production line. There is little problem in shifting machines, since each machine is numbered and has an individual drive. The idle machines are sent to storage, and the remaining machines are regrouped. This procedure is usual for

OUTSTANDING PERFORMANCE



...equipped with

BARCO *Revolving* JOINTS

QUICK FACTS:

1. **Trouble-free Performance! Thanks to long lasting "CTR" V-Type Seal Rings—a Barco Development.**
2. **Free-Floating, Low Torque Installations. Cuts Power Costs up to 50%.**
3. **Unexcelled Ability to withstand Vibration and Hard Usage.**
4. **Better Temperature Control where steam is used for heating rolls due to better circulation.**
5. **Low Maintenance; No Adjusting. Holds seal running or standing.**

The name "West Point" stands for carefully engineered designs and faultless performance in textile mill slashers everywhere. With West Point, as with other leading manufacturers, one key factor in performance is the selection of revolving joints.

To provide *trouble-free* rotating connections for steam supply and condensate drainage, West Point Slashers are regularly equipped with Barco Revolving Joints—*as indicated in the above installation.*

Let us send you complete information about Barco's new *improved* Type IBR Revolving Joints for Textile Machine Dryers, Slashers, Dry Cans, Sanforizers. *Catalog 300 on request.*

BARCO *Manufacturing Co.*

1834N Winnemac Avenue, Chicago 40, Illinois • In Canada: The Holden Co., Ltd.

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

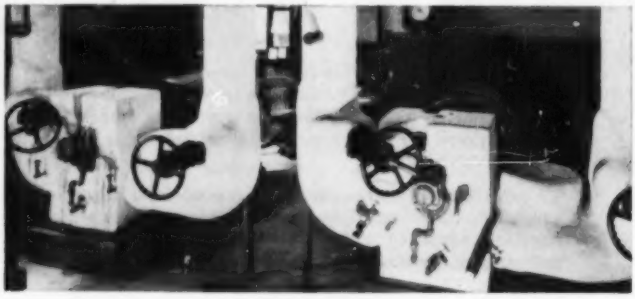
New Plant of White Laboratories, Inc., Kenilworth, N. J. A. M. Kinney, Inc., Architect-Engineers of Cincinnati, Ohio; Frank Bricco, General Contractor; Frank A. McBride Co., Mechanical Contractors.

PUMPING CHILLED WATER FOR AIR CONDITIONING thru "Breathing Walls"

"Buffalo" PUMPS

Whatever your operation, air conditioning is a "must" for keeping employees comfortable and product quality up. And air conditioning requires efficient pumps for circulating chilled water, as the two "Buffalo" Double Suction Pumps are doing below, in the new White Laboratories plant. Here, clean, conditioned air is circulated through "breathing walls" (made up of innumerable tiny holes), a unique application assuring the highest quality in the pharmaceuticals produced by White. It's the first installation of its kind.

Be sure of the pumps *you* use for handling clear water or chemicals. Specify "Buffalo", the complete line of centrifugal pumps used by leading industries for every liquid handling job. Why not write us *today* for information on the pumping application *you* are planning?



"Buffalo" insulated Type "SL" Double Suction Pumps on Chilled Water Service in the new White Laboratories plant. WRITE FOR BULLETIN 955-P, which describes these pumps.

"Buffalo" PUMPS, INC.

184 MORTIMER STREET BUFFALO, N. Y.

Subsidiary of Buffalo Forge Company

Canada Pumps, Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

the week-end schedule, which is established on Thursday.

Carriers Move Yarn and Cloth

Yarn and cloth carriers relieve the knitters of secondary duties and give them more time for cloth inspection. A yarn carrier can handle around 100 machines. He opens the yarn in the storage room and takes it to large boxes in the center aisle where it is readily accessible to the knitters.

A carrier removes the cloth rolls according to a time schedule based on the production records. The cloth rolls weigh about 30 lb. for the 20s rib and 45 lb. for the lightweight rib and flat knit. A cloth carrier can tend 50 to 60 knitting machines.

A knitter blows off and cleans all controls once each shift. Every 45 min. the knitter blows off his machines before making his periodic inspection of the machine and the fabric. Knitters develop a sense of timing for blowing off the machines to control the lint. If any lint lodges in the machine, it is discovered before it can cause defective knitting.

The mill has an extra knitter who works on the second shift to assist the other knitters on this shift and to fill in when a knitter on the first shift is absent for more than one day. If a knitter is out for just one day, the mill allows his machines to remain idle. The loss of production can easily be regained, and the mill finds this system better than doubling on the other knitters or breaking into the work schedule for an extra for one day.

The knitting room remains one week plus a day ahead of the finishing department; so there is no crowding of production. The stock ahead allows for emergencies, machine outage, and knitter absence. This schedule allows the knitter more time to attend to quality, since he is not pushed for production.

Elmer McAfee, in charge of knitting, says that the production schedule and workload system have increased knitting-room efficiency and high-quality knitting.

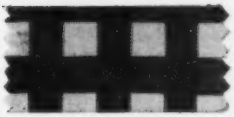
W-3 Automatic Magazines

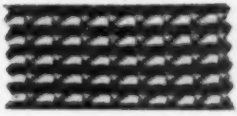
(*Continued from page 125*)

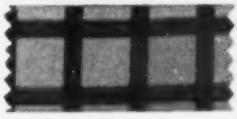
4. Move the lay to dead front center and check the detector lever setting. Remove the indicator plunger from the housing. To time the lever, it is important to position the detector lever exactly over the top half of the hole for the indicator plunger.

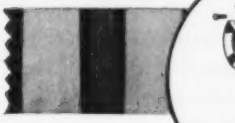
An early detector-level timing will cause the detector lever to come down on the indicator plunger before the

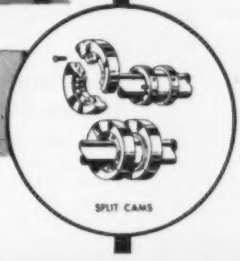
A few 3-bar sample swatches



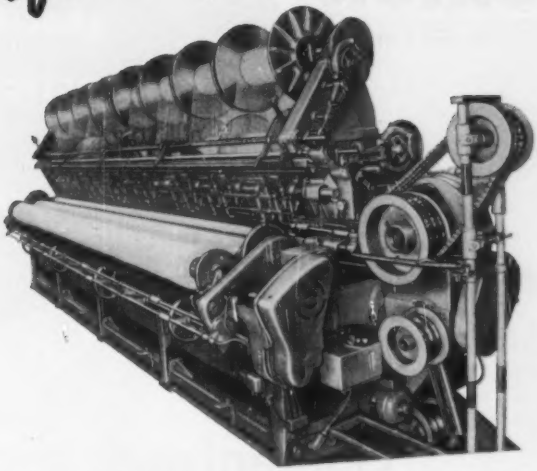








2-and 3-bar *Versatility* plus TRICOT at its BEST



With this latest 2- and 3-bar Reiner High Speed Tricot Machine you are buying almost unlimited versatility for fabric pattern and weight range. As new fibres create new and profitable markets, you can readily adapt your production to any future development. With Reiner machines you buy a new high standard of perfection in tricot knitting, plus unexcelled quality at highest speeds, economy, reliability and ease of operation—all mill proved and a matter of record.

Available with pattern wheel or chain link drive. By means of split cams and other provisions the Reiner 3-bar machine can be run as 2-bar units with speeds stepped up accordingly. Automatic oil feed—Automatic beam let-off—Direct take-up and needle-down disc attachment—All gauges—Knitting widths 168" and 84".

TO PRODUCE TRICOT AT ITS BEST YOUR BEST BUY IS REINER!

THE REINER LINE

Tricot Machines (2- and 3-bar, 84" and 168")—Simplex (Double Knit) Machines—Raschel Machines—Magazine Creels—Single Type Creels—Truck Creels—66 and 72 gauge (4 section) Full Fashioned Hosiery Machines—Automatic Schiffli Embroidery Machines (10 and 15 yards)—Bobbin Winding Machines (for Stitching or Quilting)—Ready Spare Part Service for all Reiner machines.

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

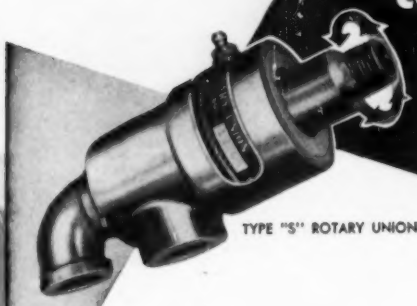
FOUNDED IN 1903 — 550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY

ROTARY UNION

(REG. TRADE MARK)

a revolving steam connection

PIPE SIZES 1/4" THROUGH 3"



TYPE "S" ROTARY UNION

Guaranteed

If you are still using old fashioned stuffing boxes or packing joints — or the types of steam joints which need constant tightening and adjustments — try ROTARY UNIONS on your slashers, dry cans, embossers, printing, or coating machines.

The ROTARY UNION is *guaranteed* to give perfect sealing service for one year without requiring mechanical maintenance of any sort . . . and many have been in service three times that long without such attention. You save maintenance, labor, and downtime by using ROTARY UNIONS.

Contact our nearest office for full information or write Dept. 12W for Catalog.

"Where *Good Connections* Count"

PERFECTING SERVICE COMPANY

332 Atando Avenue (Home Office and Factory) Charlotte, N.C.

Atlanta, Chicago, Cleveland, Philadelphia, Providence, New York, Montreal, Toronto

plunger is removed from the housing. A late timing will cause the lever to strike the plunger as the lay moves toward back center. Either condition may result in the transfer of "pieces" of filling.

5. Check the transfer hammer. When the hammer is pushed down manually against a full bobbin that is held by the magazine giveways, the contour of the hammer should be parallel to the bobbin butt and to the filling on the bobbin.

Set the stroke of the hammer for $\frac{1}{64}$-in. clearance between the hammer and the rings of the bobbin in the shuttle when the lay is at front center. At this point, the outer end of the hammer should just clear the filling on the bobbin in the shuttle.

Since the bobbin starts to transfer before the lay reaches front center, the hammer should just clear the inside wall of the shuttle at front center.

Check the cradles, slides, and giveways to be sure that they move freely.

After the magazine is checked and adjusted, turn the lay over slowly by hand to see that the magazine will transfer accurately.

If loomfixers check these settings after they inspect other loom motions for faulty transfers, magazine failures will be few.

Textile Equipment News

(Continued from page 164)

noticed, the inspector presses a button and immediately a colored thread is attached, by means of a strong adhesive, across the selvage at that point. The adhesive does not harm the fabric.

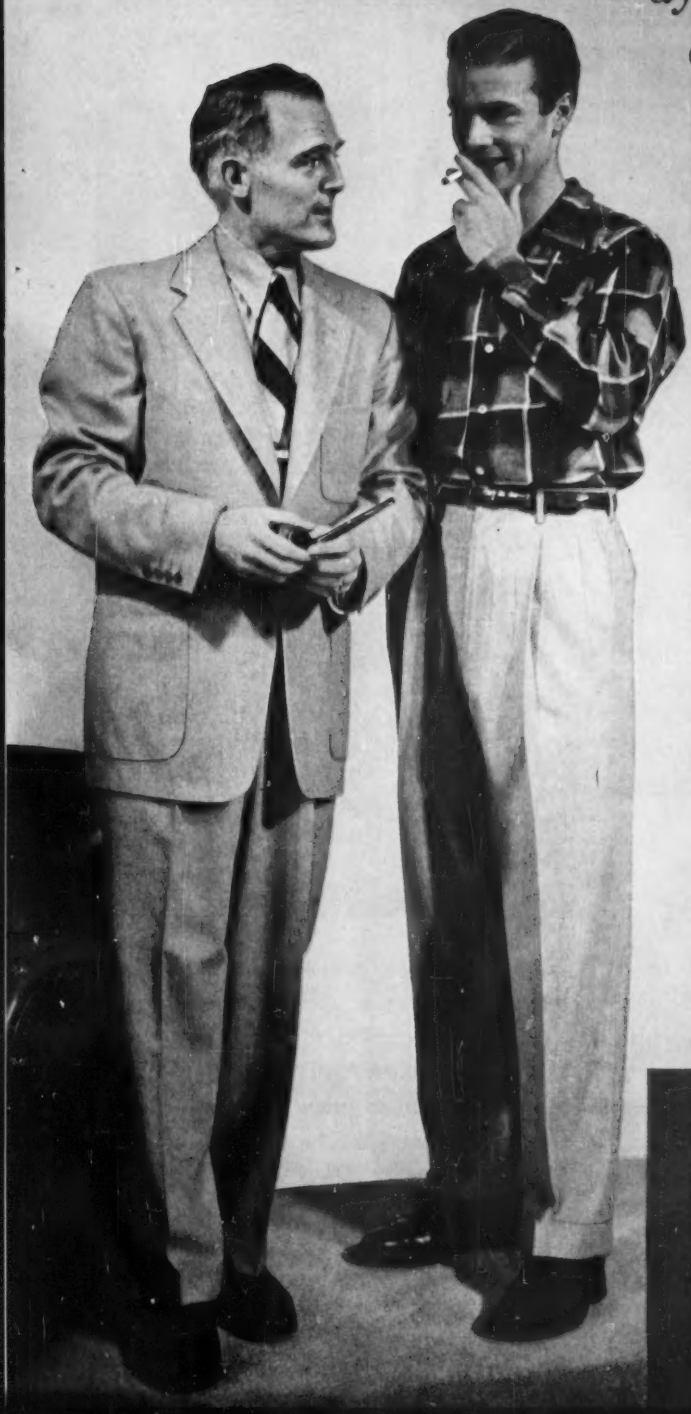
The machine can attach threads of four different colors. The unit is easily attached to existing inspection tables.

Electronic Control Actuates Brakes in 5/1000 Sec.

A new electronic controller, said to be the fastest-acting ever designed, has been developed by Warner Electric Brake & Clutch Co., Beloit, Wis. The new device can actuate an electric brake in 5/1000 sec.—said to be 80% faster than any similar control manufactured up to now. In addition to its increased operating speed, it can be controlled at any distance from the brake, either by a standard wire connection or by a transmitted wave, similar to a radio wave.

An unusual safety feature of the controller is a twin stopping circuit. Should one circuit fail, the other will actuate the control in 2/10,000 sec. Other safety features include a large

Call on Du Pont Service *for help in dyeing your blends of* ORLON* *and* wool



When fabric men were developing a long-wearing, crease-resistant flannel of "Orlon" and wool, they wanted it to have all the appearance advantages that previous flannels had offered. They found that Du Pont's technical-service experts were ready to work with them in developing dyeing procedures for their mills.

With this cooperation, the dyeings were made in the most effective and economical way. Du Pont's experts drew on past experience and test results in helping to avoid the problems usually encountered in dyeing a fabric of man-made fiber content.

When you have a dyeing problem with any blend, call on Du Pont. Because of Du Pont's unique experience as both producer of dyes and creator of man-made fibers, our technical-service experts are well equipped to study your problem. They will work with you in solving it.

Research at Du Pont is constantly directed toward improving dyes and dyeing methods. Keep in touch with Du Pont for the latest developments. E. I. du Pont de Nemours & Co. (Inc.). Dyes and Chemicals Division, Wilmington 98, Delaware.

*ORLON is Du Pont's trade-mark for its acrylic fiber.

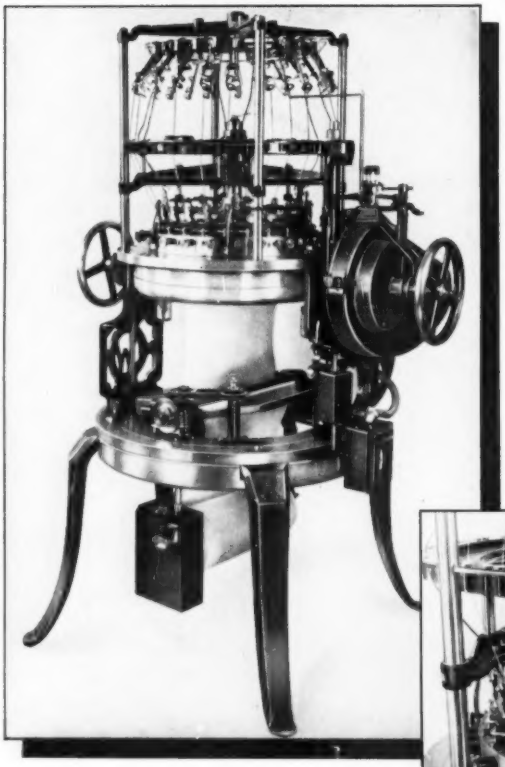
Du Pont Dyes

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

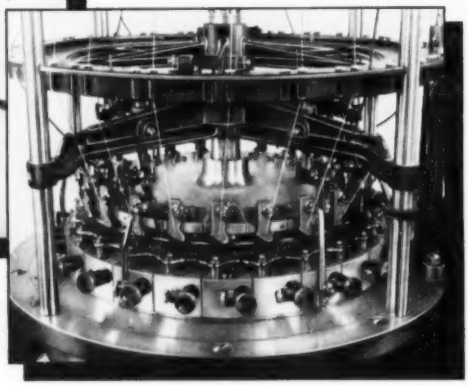
Question . . . **Why does the WILDMAN Multiple-Feed Rib Machine offer *Outstanding Advantages* to You?**



Answer . . .

This Machine is

PRECISION ENGINEERED



Features that Answer Your Questions

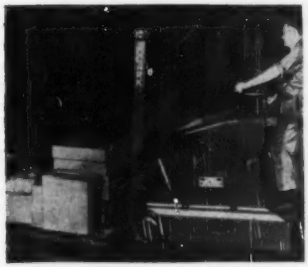
Increased production for unit floor space . . . increased production for small additional power consumption . . . machine operation offers a much greater opportunity for pattern designs in sports wear and all other knitted garments . . . uniformity in garment sizes is guaranteed for yarn is fed under even, constant tension . . . depth of pattern is greater where a different colored or type of yarn is used in relation to other yarns.—Truly, a production man's machine.

WILDMAN

MANUFACTURING COMPANY • NORRISTOWN, PENNA.

condenser that stores electric power for emergency use, a sensitive limit switch, and electronic tubes charged with mercury vapor.

The control is presently being manufactured only for defense purposes, but units will shortly be available for use in the textile field.



360° STEERING gives high maneuverability to this truck in narrow aisles.

Stand-Up Fork Truck Designed for Close Quarters

An electric "stand-up" fork truck, the Stoway, which can operate within its own length by means of a 60° turning radius and 360° steering has been announced by Clark Equipment Co., Battle Creek, Mich. The new truck is designed for warehouses and terminals where close quarters and narrow aisles demand high maneuverability and where the driver must continually mount and dismount. It has a capacity of 2,000 lb. at 24 in., 2,500 lb. at 15 in., and 1,650 lb. at 30 in.

Driver comfort, easy "off-and-on" access, convenience of controls, and excellent visability are distinctive features. Acceleration and direction of travel are controlled through forward or backward movement of a single lever. Lift and tilt controls are grouped to the right of the acceleration-travel-control lever to simplify hand movements. The rubber-cushioned floor board contributes to driver comfort.

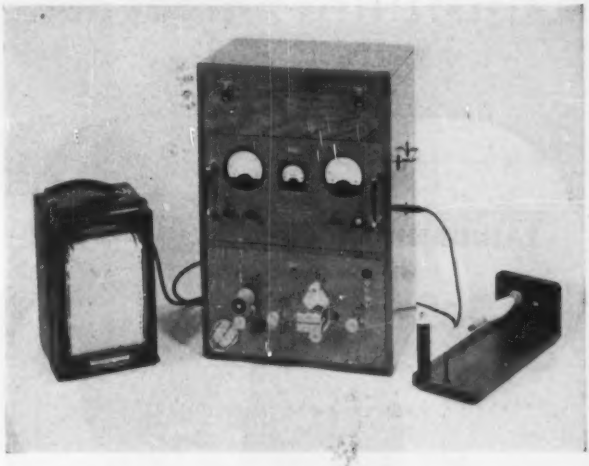
The Stoway has two methods of braking. Heavy-duty hydraulic brakes on the drive wheels serve regular and parking-brake operations. "Deadman" or parking brakes go into action when the driver dismounts or removes his foot from the brake pedal. Positive-control reverse "torque-braking" is employed.

The drive and pump motors are enclosed. The drive motor is mounted directly to the drive axle to eliminate all connecting components such as shafts, chains, and sprockets.

The automatic acceleration system has a preset time delay between each point of power. It is impossible

Fielden INSTRUMENTS AND CONTROLS

Stability of Setting Assured with
FIELDEN YARN EVENNESS
RECORDER AND INTEGRATOR



Because of its inherent electrical stability it is only necessary to set a Fielden-Walker Yarn Evenness Recorder and integrator once a day, instead of every 15 minutes or less.

On one setting, you can run hours of testing and know you are always "on the beam".

Integration is built in—true integration from multiplying the readings of two meters. No correcting charts are required.

Check on these features:

- *Extreme simplicity* of operation.
- *Excellent stability* and freedom from drift.
- *Wide range* from heaviest slivers to finest yarns and filaments.
- Absolutely exact zero setting and perfectly linear scale of indication against mass.
- *Inbuilt integration* of level and mean deviation.
- *Flexibility.* A remote electrode head can be provided for direct test at the frame.
- Reasonable price.

Write for full description as applied to your own requirements.

Fielden INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS CO.
2920 North 4th Street • Philadelphia, Pa.

For more information, write direct or use Reader Service post card.

This NEW CONSTRUCTION Revolutionizes Swivel Casters!

LOCK-WELD

Built Stronger · Last Longer

Fairbanks'® great new swivel caster

LOCK-WELD CONSTRUCTION (patented) MEANS

NO KING PIN — completely eliminates the greatest single cause of caster failure: the king pin.

EASIER SWIVELING — double ball race held in rigid alignment. Tremendous increase in swiveling efficiency.

SUPER STRENGTH — top plate and retaining plate are projection welded into an integral unit. No wear between rigid and moving parts. Patented leg design prevents bending and buckling...disperses load over larger area.

COINED RACEWAYS · HARDENED BALL BEARINGS · PRESSURE LUBRICATION

Complete information on LOCK-WELD casters is contained in Bulletin 23-33, free on request.

THE Fairbanks COMPANY

393 LAFAYETTE STREET · NEW YORK 3, N. Y.

Branches:
New York 3 · Pittsburgh 25 · Boston 10 · Rome, Ga.

VALVES · DART & PIC UNIONS · TRUCKS · CASTERS

either to overload the motor by fast shifting or by simultaneously applying both forward and reverse power. Travel speed is 6½ mph. empty and 6 mph. loaded, with four speeds forward or reverse.

Rolled-steel, telescopic uprights are available in sizes ranging from 72 to 132 in. maximum fork height. The standard upright for the Stoway has a 94-in. maximum fork height. "Hi-Lo-Stack" uprights with 47½ to 64 in. of free lift with no increase in over-all upright height are optional at extra cost. An 18° tilt range—4° forward and 14° backward—provides a greater-than-normal tilting range.

TINY TUFTED NYLON BRISTLES on this new furnisher brush give even distribution of color yet make for ease in cleaning.

Furnisher Brush Designed For Even Color Distribution

A new style of nylon brush, the Tiny-Tuft Metlkor, designed for color furnishing when shallow engraving or low-viscosity colors are used, has been developed by M. W. Jenkins' Sons, Inc., Cedar Grove, N. J.

The new brush embodies the advantage of the regular Metlkor tufted non-bleed construction, which permits ease of cleaning and quick change of colors; yet at the same time its tufts are smaller and more closely spaced to give an over-all distribution of the bristle.

The new brush minimizes splattering; shallow and intricate engravings are thoroughly cleaned of lint and other matter; color is evenly applied and distributed. Every bristle in every tuft, radial to the core, gives uniform density and firmness.

Tiny-Tuft Metlkors are set in solvent-proof plastic cement and do not shed or break off. They are refillable.

Packaged Chilling Unit Prevents Dyestuff Foaming

A continuous and economical supply of chilled water for dyehouse use is being achieved by the use of self-contained water-chilling equipment and a chilled-water storage tank at

SUPREME'S AMAZING NEW LT/SA

opens new sales routes in both regular and long loop striped terry

SUPER-VERSATILE KNITTER WIDENS PROFIT POSSIBILITIES IN BEACHWEAR, SPORTSWEAR, OUTERWEAR, TOWELING, ETC.

Knit fluffy, long, super-looped terry or regular, smooth, short loop terry. Knit both types in plain colors or with automatic 4-color stripes . . . on Supreme's new multi-fabric producer—Model LT/SA.

The loops are snag resistant and can be easily adjusted for different lengths and densities. The LT/SA knits a broad range of yarn sizes to produce fabrics ranging in weight from heavy bathrobe terry to light polo shirt fabric. In addition, a wide variety of natural and synthetic yarns can be used for many consumer-appealing texture variations.

EASILY CONVERTIBLE TO JERSEY PRODUCTION IN YOUR MILL

The LT/SA is Supreme's outstanding multi-fabric sales knitter. It can be easily converted into any machine in Supreme's famous striper line . . . Models SA, SA/ROF or SA/AF. This enables the knitter to produce the entire range of Supreme patterned, striped or pattern-placer cloth. Machines may also be purchased complete as Models LT/SA-ROF or LT/SA-AF.

Production Rates—

Striped Terry—Up to 20 yards per hour.

Single Color Terry—Up to 30 yards per hour.

As an Automatic Jersey Striper—Up to 40.5 yards per hour plain jersey . . . Up to 25 yards per hour Automatic Stripes.

Write for complete information and free sample swatches

SUPREME
KNITTING MACHINE CO., INC.
107 JOHNSON AVE., BROOKLYN 6, N. Y.
Southern Representative and Showroom:
The Matlock Co., 711 S. Tryon St., Charlotte, N. C.

Another wooden DYE HOUSE ROOF that won't rot or decay

Hellwig Dyeing Corporation of Philadelphia had long been bothered with rot and decay in their dye house roof. Because of the presence of condensate and steam, the roof had been a constant source of maintenance expense.

In 1943, they incorporated "Wolmanized"® pressure-treated lumber into the roof structure of the dye house. According to Mr. Otto W. Peyer of Hellwig Dyeing Corporation, "THIS TYPE OF ROOFING IS THE ANSWER TO DYE HOUSE CONSTRUCTION. TREATMENT PREVENTS FUNGUS GROWTH".

The insulating qualities of wood make wood a desirable building material in the construction of roof decks, floors, and structural members of dye houses and bleacheries. "Wolmanized" pressure-treatment makes this wood last longer.

"Wolmanized" lumber can solve many of your maintenance problems which are brought about by the continual presence of moisture in dyeing and finishing plants. Ask your architect or plant engineer about "Wolmanized" pressure-treated lumber . . . or write for complete information and the folder, "Wood Preservation".

American Lumber & Treating Company

General Offices: 1601 McCormick Bldg. • Chicago 4, Illinois

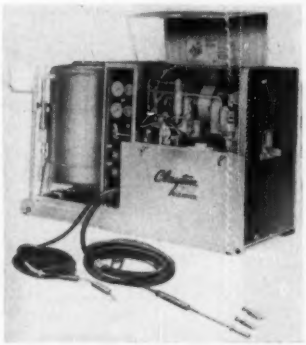
Offices: Little Rock, Ark. • Portland, Ore. • Boston • Los Angeles
San Francisco • Baltimore • New York • Jacksonville, Fla.

Wolmanized
PRESSURE TREATED
Lumber

Cross Cotton Mills in Marion, N. C. The water-chilling and storage equipment is manufactured by United States Air Conditioning Corp., 330 Como Ave., S. E., Minneapolis, Minn.

The mill uses Usairco 20-ton RKC water chiller, which contains in a single casing a compressor, a refrigerant water-chilling section, and an evaporative condenser. The RKC-20 is operated in conjunction with a 5,000-gal. chilled-water storage tank to spread the load on the chiller, which arrangement enables the use of a smaller refrigerant unit than would otherwise be possible.

Water in the storage tank is maintained at 35° F. and is piped to dye machines when low temperatures are required to prevent dyestuff foaming.



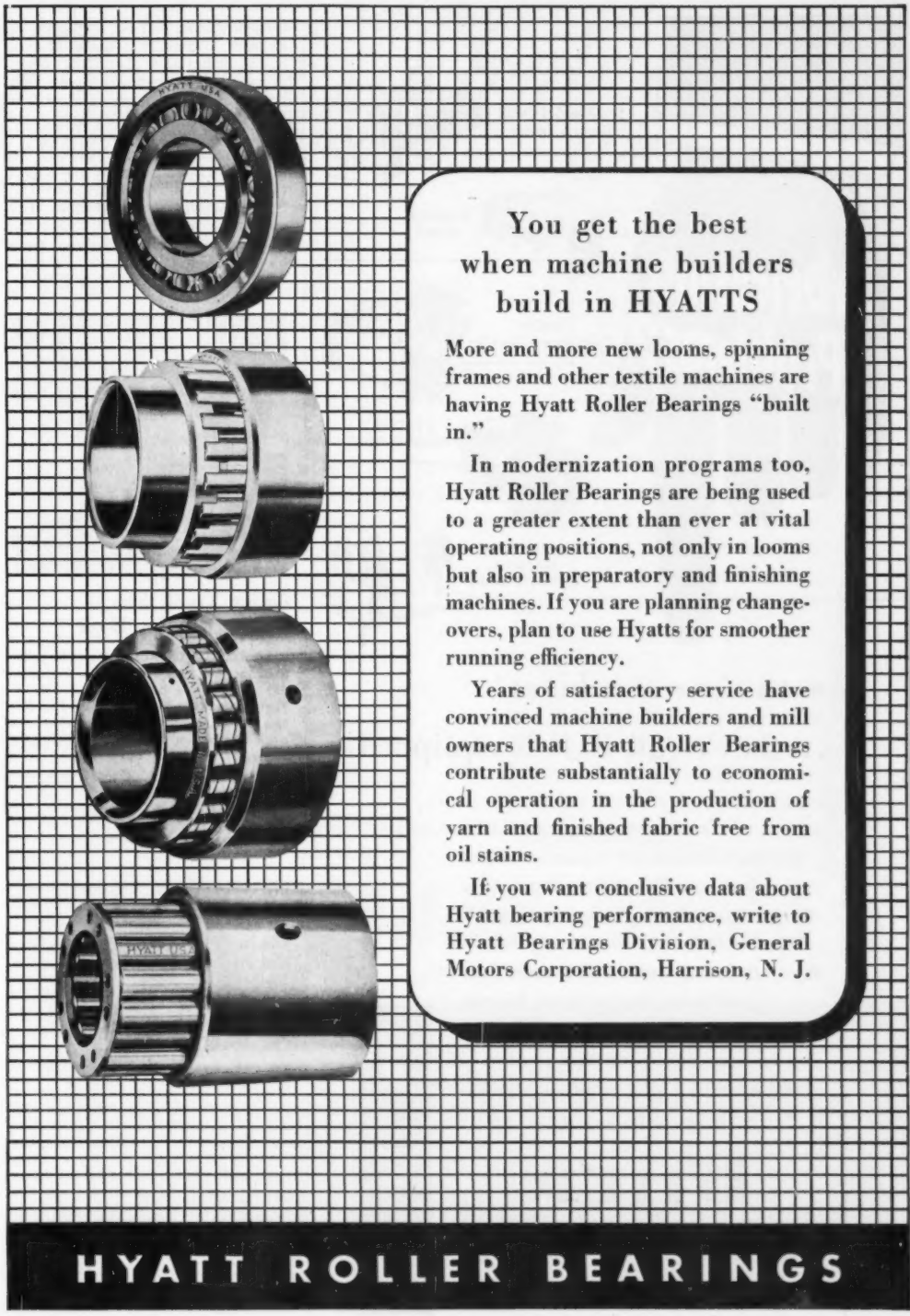
LARGE-SCALE CLEANING can be handled easily by this heavy-duty unit originally developed for Armed Services use.

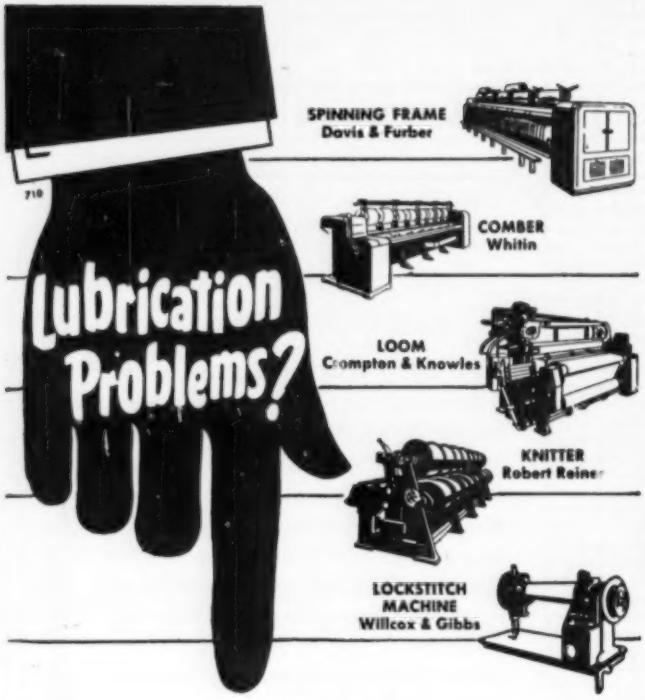
Cleaning Machine Operates 4 Hr. Continuously

A new steam cleaning machine, capable of discharging up to 540 gal. per hr. of pressure-detergent spray and up to 540 gal. per hr. of hot- or cold-pressure rinse simultaneously has been announced by Clayton Mfg. Co., El Monte, Calif. The new unit is said to offer virtually double the cleaning capacity of standard steam cleaning equipment.

Equipped with a 60-gal. detergent-concentrate tank and a 40-gal. fuel tank, the BOE-600S cleaner will operate for four hours continuously at maximum load and for many additional hours at lesser loads without replenishment of the detergent or fuel supplies.

The vapor generator operates with a thermal efficiency in excess of 80% under all operating loads. The pressure atomizing burner system, equipped with safety switch control, operates efficiently on common, low-cost


You get the best when machine builders build in HYATTS
More and more new looms, spinning frames and other textile machines are having Hyatt Roller Bearings "built in."
In modernization programs too, Hyatt Roller Bearings are being used to a greater extent than ever at vital operating positions, not only in looms but also in preparatory and finishing machines. If you are planning change-overs, plan to use Hyatts for smoother running efficiency.
Years of satisfactory service have convinced machine builders and mill owners that Hyatt Roller Bearings contribute substantially to economical operation in the production of yarn and finished fabric free from oil stains.
If you want conclusive data about Hyatt bearing performance, write to Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.
HYATT ROLLER BEARINGS



not on these machines!

...they're all BIJUR equipped

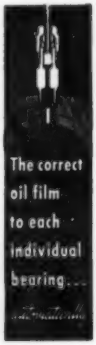
Each maker of these machines had your best interest in mind when he built-in a Bijur lubricating system. Human carelessness and forgetfulness are eliminated by machines having built-in Bijur lubricating systems. These machines will never be shut down because they lack continous, proper lubrication. Make certain the machine you buy is furnished with a Bijur lubricating system.

Write for Bulletin 6A

BIJUR

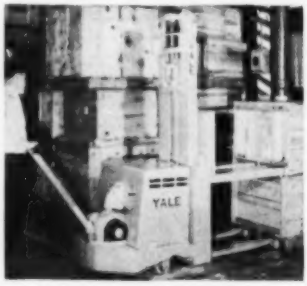
LUBRICATING CORPORATION

Rochelle Park • New Jersey



fuels—kerosene, fuel oil, distillates, or gasoline. Economy in the utilization of the detergent is assured by means of an accurate metering device that maintains the detergent-water ratio at the level found most effective for rapid, thorough cleaning.

The machine is supplied with an insulated cleaning gun, a rinse gun, two sets of delivery hoses, and 150 ft. of heavy-duty electrical cable. The equipment operates on 220-v. 60-cycle, single-phase current. It is 48 in. high, 88 in. long, and 34 in. wide. Weight, with storage tanks empty, is 2,000-lb.



Pallet Truck Stacks Up to 120 In. High

NEW 4,000-LB.-CAPACITY high-lift pallet truck that has been added to the Worksaver line of motorized hand trucks of Yale & Towne Mfg. Co., Roosevelt Blvd., Philadelphia 15, Pa., is designed to transport and stack skid bins or single-face pallets up to heights of 120 in. The truck has side caster wheels for stability and constant floor contact under all operating conditions. Pallet forks are used to give a minimum over-all truck length. The lowered fork height accommodates single-face pallets.

Novelty-Yarn Assembly For Collins Twisters

A novelty-yarn-producing assembly that fits into the foot end of its twister frames is now available from Collins Brothers Machine Co., 647 Roosevelt Ave., Pawtucket, R. I. The assembly is activated from a pattern chain, rather than from a cam, and controls to a great extent a multiplicity of novelty-yarn constructions.

It is necessary to disengage only one gear to make the novelty twist into an ordinary ply twister unaffected by the foot-end assembly. Thus maximum yarn-construction flexibility is obtained.

The assembly works as follows: The risers pass through a limit switch that activates a solenoid, which in turn engages and disengages by means of a load-and-fire clutch the top line of feed rolls on the frame. Thus, the top

Check these features

Kidde-Aveco Tricot Machine turns out Quality Fabrics at High Speed

Where you want fast production of improved quality fabric use the Kidde-Aveco High Speed Tricot Machine.

Brakes for controlling the beams have been replaced by a mechanical continuous let-down. The ratchet take-up has been replaced by a new continuous take-up. A high starting torque motor equipped with quick stop is used to minimize the periods of acceleration and deceleration. These changes improve fabric quality . . . eliminate shade marks . . . reduce stop marks so that they usually dress out.

✔ **NEW CONTINUOUS LET-DOWN.**
It is easy to set and maintain because it's mechanical in operation. It completely eliminates shade marks and reduces stop marks. Fabric quality is improved.

✔ **NEW VARIABLE SPEED DRIVE.**
A turn of a hand wheel varies machine speed. No chain drive . . . no gears to be changed . . . quieter operation. Tachometer included.

✔ **NEW CONTINUOUS TAKE-UP.**
It permits quality to be established quickly by turning an adjustment screw. No gears or sprockets to be changed. No clutch. Once set, it requires no adjustment.

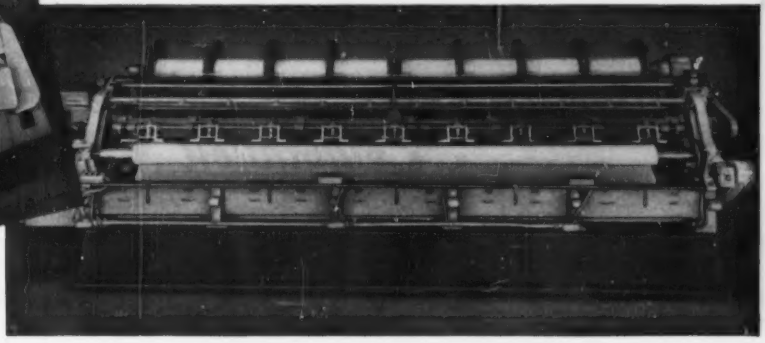
✔ **OTHER FEATURES**
These include improved plunger design, improved front guide bar lifting mechanism, quick-stop and jogging control.

Left end of machine showing enclosed gear box, pattern mechanism, motor and controls.

KIDDE MANUFACTURING CO., INC.
BLOOMFIELD, N. J.

Kidde-Aveco

FOR TOP-QUALITY FABRICS



Right end showing continuous let-down and take-up.

Famous Original

"SAUPE"

HIGH SPEED TRICOT MACHINES

2 bar—168" in all gauges from 18 to 34.
Also 3 bar machines—with solid and cut press attachments for unlimited range of raised effects.

HIGH SPEED DIAGONAL CIRCULAR KNITTING LOOM

for **MILANESE** type

fabrics for underwear and outerwear

GROSS

4 HEAD EMBROIDERY AUTOMAT

To embroider your own garments in your own factory—Easily! Quickly! without skilled or experienced help.

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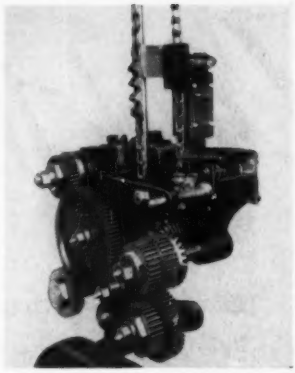


PATTERN-CHAIN ACTIVATED, this novelty-yarn-making package can be fitted into the foot end of a regular Collins Brothers twister. Engaging and disengaging the assembly is controlled by one gear.

line of feed rolls gets its stop-and-go motion that is the basis of novelty-yarn construction.

To get three speeds on the top feed rolls, the assembly can be used in conjunction with an over-running clutch attachment that makes possible splashes of any desired length and frequency.

All the change gears on the single-roll knotting attachment for the company's novelty twisters are 12-pitch, the same as the twister gears: so they are interchangeable.

ACCURACY to within ½ of 1% of the total scale at any point in its range is reportedly built into this new Model-P test gauge for use on pressure equipment.

Test Gauge Verifies Pressure-Instrument Accuracy

A periodic check of pressure instruments with a reliable test gauge has been known, in many instances, to save process fluid and otherwise reduce operating costs in amounts many times the cost of the test device. Such an instrument is the 6-in. Model-P

For more information, write direct or use Reader Service post card.

Maximum Production on Any Type Yarn

Battery of Cocker Slashers in a Southern Mill

This battery of Cocker slashers is used to run cotton, filament, and spun yarns and is giving the same efficiency and maximum production on all three yarns. These machines are complete with the latest Cocker improvements, permitting operation at high speeds with minimum down-time. Some of these features are:

Finger-tip control of tension on yarn.

Patented Automatic Friction Control, permitting operation at high speed without heating or friction.

Graduated drive, permitting going from high speed to crawl speed without overrun of beams, and from crawl speed to high speed without strain or jerk on the yarn.

Instant speed changes to 90 yards per minute.

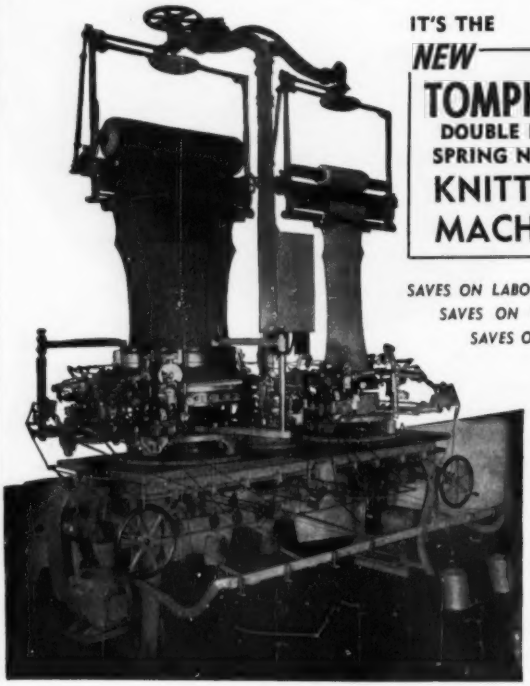
THE LEADER
COCKER
AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

For more information, write direct or use Reader Service post card.

here's the knitting machine
that will give you your choice of
• LOWER COST PER YARD
with less operators
OR . . .
• DOUBLED PRODUCTION
with perfect cloth all the way
plus maximum fabric versatility!



IT'S THE
NEW
TOMPKINS
DOUBLE HEAD
SPRING NEEDLE
KNITTING
MACHINE

SAVES ON LABOR!
SAVES ON WASTE!
SAVES ON NEEDLES!

FULLY
MODERN
• individual motor drive for each head
• electric stop motion
• furnishing wheels

WRITE FOR COMPLETE DATA

Let us show you what this machine will do for you—send for NEW DATA SHEET showing actual machine comparisons . . . gives you the kind of cost, production and cloth quality information you've been looking for! Subjects covered include Fabric Flexibility; Perfect Rolls of Cloth; Needle Breakage Reduced One-Half; and Needle Savings! Write, phone or wire . . .

TOMPKINS BROS. CO.
ESTABLISHED 1846
629 Oneida St. Syracuse 4, N. Y.

test gauge, made by The Foxboro Co., Foxboro, Mass. An inexpensive gauge, it not only serves in checking pressure controllers, recorders, and indicators but also furnishes a standard of accuracy for calibrating other pressure-testing equipment in the instrument department.

The new test gauge is furnished in ranges of 0 to 30 Hg. v. a. c. up to 0 to 10,000 psig., and is guaranteed accurate within ½ of 1% of the total scale at any point throughout its range. Suitable tapered-pipe male thread connections are provided.

Construction is of specially selected materials. The case is cast aluminum, threaded to receive a brass ring that is finished to match the case. The measuring element is a full 270° Bourdon spring of steel or beryllium copper. The movement consists of a chrome-plated steel pinion, segment and arbor, monel plates, and a stainless-steel hairspring.

A stainless-steel micrometer-adjusted pointer facilitates precision measurements on an easy-to-read dial. A durable leather carrying case with shoulder strap is optional.

NARROW AISLES, troublesome corners, and other restricted areas are no materials-handling problem for this 34⅜-in.-wide lift truck.

Yardlift Truck Features Important Improvements

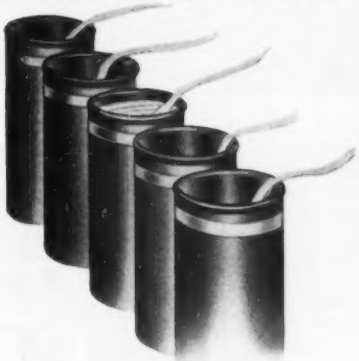
Several important improvements feature the new Yardlift 20, a pneumatic-tired fork-lift truck of 2,000 lb. capacity, that has been announced by Clark Equipment Co., Battle Creek, Mich.

1. Smooth tilt action and upright stability are obtained by twin double-acting tilt cylinders that replace the single cylinder formerly used.

2. Honed cylinder surfaces assure positive seal and long packing life. Piston-type construction minimizes leakage and maintenance. Rods are

How much do you know about tapes?

How do workers speed warping by feeding "sandwiches" to the loom?



Why should locating *slivers* no longer get "under your skin"?

What's the simplest way to start things rolling on a high-speed winder "shell"?

FREE new book gives you all the answers

Eighteen pages packed with facts and photographs show you how the many "Scotch" Textile Tapes have streamlined production in many of the nation's largest mills.

You'll read about tapes you never knew existed—tapes with "stick-at-a-touch" adhesive on both sides, tapes with thermosetting adhesive, tapes strong enough to tow a truck.

And you'll see, too, how these tapes can streamline production in *your* operations. *New* applications may suggest themselves to you—*new* ways to save.

Mail the coupon today for your copy of "Today in the Textile Industry." There's no obligation, of course.

Minnesota Mining & Mfg. Co.
St. Paul 6, Minnesota

Please send a copy of "Today in the Textile Industry."

Name.....

Firm.....

Address.....

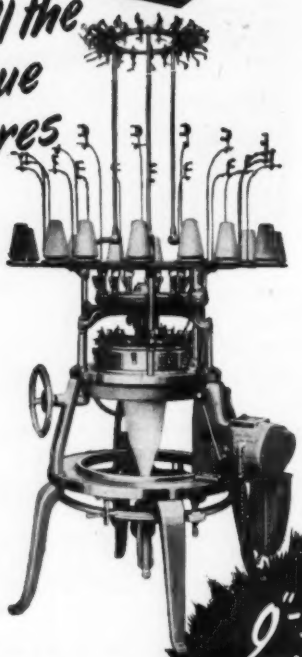
City.....Zone....State.....

3M COMPANY

SCOTCH BRAND Textile Tapes

The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N.Y. In Canada: London, Ont., Can.

The New
Mellor—MB—Bromley
INTERLOCK
Multifeeder and stripe or check pattern machines
with all the unique features



9"-30" DIAMETERS
20-24 CUTS

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Send for full details, to the builders of more than 7000 Interlock machines operating successfully in almost every country in the world.

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effectively protected from dirt by rubber dust boots.

3. A convenient instrument panel on the new model is positioned for easy reach and visibility. It includes all recording dials, the ignition switch, and a starter button.

4. A new quick-change clutch, standard on most of its larger models, is another notable improvement in the Yardlift 20.

5. The Elliott-type steering axle is another important feature. The axle is pivoted in rubber torsional bearings to minimize road shock and at the truck frame center to permit constant wheel contact during travel over uneven surfaces.

Other specifications of the new Yardlift 20 are—

Length over-all, less forks	72⅜ in.
Outside turn radius	71⅝
Minimum intersecting aisle	59
Width over-all	34⅜
Wheel base	40
Steering-wheel height	59¾
Underclearance at center	6
Lowest point of underclearance	5

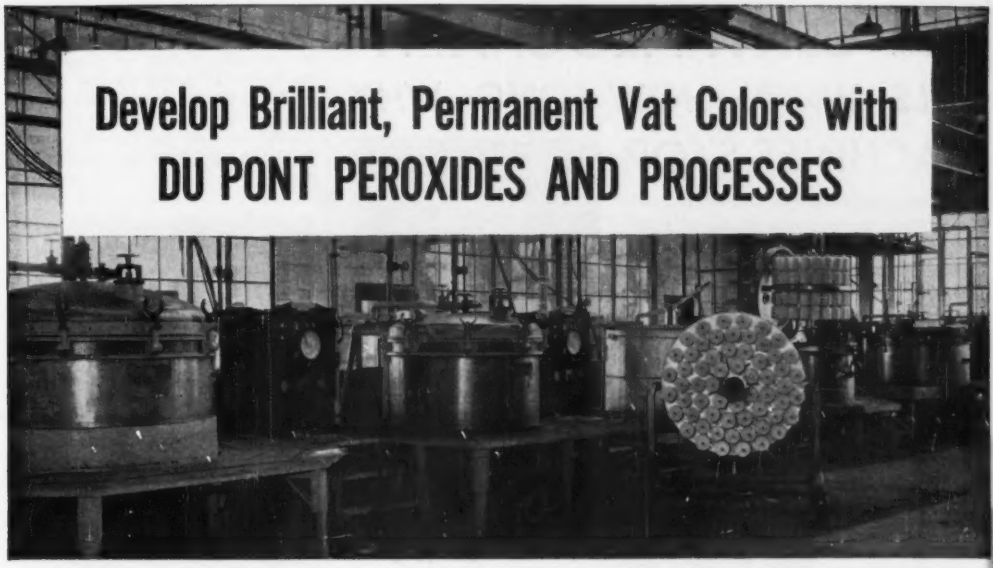
AUTOMATIC ATTACHMENT for drum handling has no side clamps or projections to get in the way when one is stacking or moving drums in close quarters.

Drum and Barrel-Handling Device Eliminates Pallets

A new, automatic attachment for drum and barrel handling with Yale gasoline and electric fork trucks is available from Yale & Towne Mfg. Co., Roosevelt Blvd., Philadelphia 15, Pa.

The new Marvel Lift-o-Matic attachment handles any drum, regardless of bead or rim size. It can be attached to any Yale fork truck in a few minutes by a truck operator. No additional controls are required since pickup and release are effected through raising and lowering of the truck lift cylinder.

Drums can be tiered or removed at



Develop Brilliant, Permanent Vat Colors with DU PONT PEROXIDES AND PROCESSES

VAT OXIDATION with "Albone" 35 hydrogen peroxide offers dyers an economical means of fixing reduced vat colors. Acid peroxide solutions made with "Albone" 35 quickly oxidize most vat dyes . . . produce brilliant shades of exceptional depth and color fastness. Brightness is frequently superior to results obtained with chrome acetic acid.

Fabrics oxidized with "Albone" 35 can be readily finished. No objectionable metallic residue from the oxidation agent remains on the cloth after treatment—permitting greater cloth absorbency. In Sanforizing, this means greater speed and efficiency . . . in sewing heavy fabrics, freedom from overheated needles.

Equally suitable for continuous dyeing, jig dyeing or circulating machines, "Albone" 35 baths conserve time and material. There is little bleed-off in the oxidation bath—therefore, no necessity for changing the bath between runs of different shades. Bath maintenance is easy, whatever the fiber—cotton, viscose rayon, silk or wool; whatever the form—raw stock, yarn or piece goods.

Let Du Pont Help You With Your Wet Processing Problems

The excellent results obtained with Du Pont peroxides and processes for vat oxidation are typical. Whatever your wet processing problem—*continuous cotton or wool bleaching, batch cotton or wool bleaching or hosiery bleaching*—Du Pont technical and engineering men stand ready to help you. They'll be glad to show you how to get the most from your processing equipment and will explain the advantages of bleaching with "Albone" hydrogen peroxide. For more information and technical literature, send in the coupon below.

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PEROXIDES
FOR TEXTILE BLEACHING

Available in drums and tank cars { "Albone" 35 . . . . Hydrogen Peroxide 35% / "Albone" 50 . . . . Hydrogen Peroxide 50%

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- ☐ Continuous Wool Bleaching
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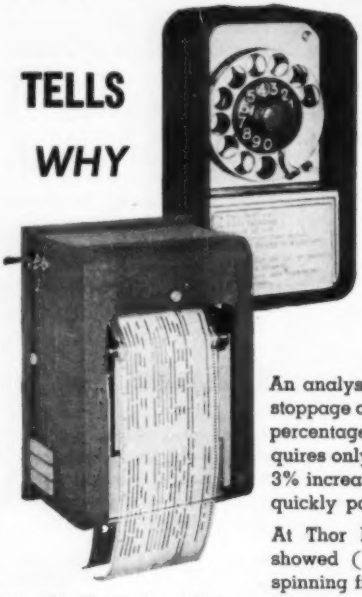
For more information, write direct or use Reader Service post card.

THE CENTRALOGRAPH
TELLS—WHEN—HOW LONG—WHY
MACHINES STOP

With the Centralograph Central Recording System, the operator of one or more machines—when one stops—immediately "telephone-dials" a code number giving the REASON for the stoppage. This number is recorded on the same graphic chart that records the starting, running and stopping time. The "dial" is placed on or near the machines for quick action. The Centralograph, by giving you complete data you could never get before, makes possible increased output, lower costs, improved quality.



Dialing Code for Machinery Stoppage

Number	Reason
1	Stop to experiment
2	Stop to change balls or bobbins in the creel
3	Stop to doff
4	Stop to change to different quality
5	Stop to clean or lubricate
6	Machine faults or adjustments
7	Waiting for material
8	Waiting for empty bobbins
9	Maintenance man arrived or departed
0	Other reasons

An analysis of the reasons for machine stoppage on a weekly basis is worked up percentage wise. The work involved requires only a short time. A 5% or even a 3% increase in productive efficiency will quickly pay for an installation.

At Thor Mills Ltd. the Centralograph showed (1) Second shift was doffing spinning frames about 5 min. faster than first. (2) Showed creeling procedure for rovin., differed on all 3 shifts. (3) Helped fixers concentrate on protective maintenance. (4) It spotted long-term yarn-spinning bottlenecks. (5) Eliminated all production paperwork for supervisory personnel. (6) Provided permanent "morning-after" nightshift reports in more detail. The employees liked it. Management improved production and the Centralograph paid for itself in a short time. Let us show you the possibilities in your mill. Literature on request.

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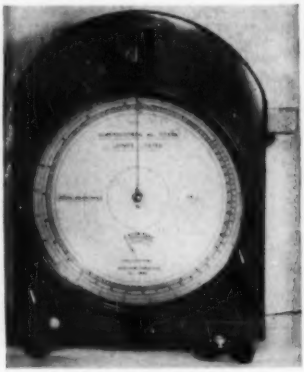
maximum fork height without the use of pallets. And because there are no side clamps or projections, drums can be picked up and spotted in close positions for maximum utilization of storage space. More than one attachment can be mounted on a truck for the multiple handling of drums.



DIRECT-READING INSTRUMENT for rapid yarn-number determination eliminates time lost in reeling, yarn waste, and use of yarn-conversion tables.

Yarn Numbers Read Directly From One-Meter Lengths

A completely mechanical weighing instrument for the direct reading of yarn numbers from one meter lengths or shorter has been developed by A. Andriesse, Padangstraat 34, Enschede, The Netherlands. Scale faces and gradations are available to meet the requirements of different types of mills and yarn-numbering systems.

The instrument is 16 in. high and weighs 16¼ lb. Highly sensitive, the instrument can nevertheless be safely carried around because the weighing mechanism has no delicate knife edges. Heat and cold do not affect accuracy either.

Other advantages of the direct-reading yarn-numbering instrument are automatic blocking, a large dial, elimination of reeling skeins, minimum waste of yarn, and elimination of yarn-conversion charts.

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For Processing Textile Fibers

Selapon Gel (SODIUM OLEYL METHYL TAURIDE) has an extraordinary versatility in the processing of textile fibers. Here are some of its uses and characteristics:

PRIMARILY A POWERFUL DETERGENT—stable to acids, alkalies, and hard water.

DOESN'T PRECIPITATE in presence of metal salts. It is unaffected by bleaching powders, peroxide, or hydrochlorite.

WETTING-OUT AGENT for use in dyeing.

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UNPARALLELED for use in bleaching, dyeing, and finishing of rayons, acetates or nylons.

EXCELLENT RESULTS IN ACID MILLING—for both the hat industry and wool processing in all stages of the procedure.

Additional information and samples of Selapon Gel will be supplied on request.

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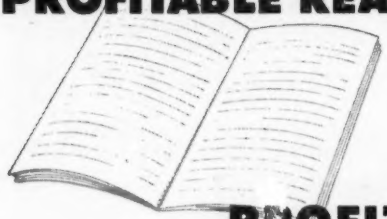

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Exploring the Community

(*Continued from page 170*)

But the thing that makes the Russell community-relations program different is the prevailing spirit of comradeship and hospitality, which is especially noted in the two big annual community parties, the grand ball at Christmas and a 4th of July barbecue.

This spirit of community parties was generated by the youngsters, or at least for them. Mrs. Tom Russell, "Miss Julia" as the school children know her, years ago organized a regular Friday night Teenage Canteen at the gym where teenagers were taught dancing and manners. The gathering grew into a regular informal Friday night party and is still held all during the school year. Following the Junior-Senior Banquet at the close of the school year, a big dance is given for the canteeners. And once "Miss Julia" planned a big Christmas party for them. The idea grew until it was not just a party for the young fry but had become the grand, annual Christmas Ball.

The Russell ladies collaborate on the big party. "Miss Julia" is in charge of the Christmas Ball, and Mrs. Robert Russell, wife of the vice president who is the third son of Ben Russell, plans the scenery and decorations of the auditorium. Both work untiringly with the employees of the mill in staging the event.

All kinds of parties are habitually given at Christmas time. Some are spontaneous and some are just custom. There are the office parties where more often than not the boss, the secretary, and the office boy find they can't erase the lines of protocol just because of the season.

There are the community Christmas tree parties people attend because they are expected, but from which they return home bored and not happy. There are the gestures of giving, such as turkeys for every worker's family or bonus checks in little envelopes. They carry the routine gesture, it is true, but may not necessarily carry the spirit.

If you want to give a real Christmas party yourself, you can learn a lot from the Russell plant. It will cost in money only as much as you want to pay for music and for decorations, but if you do it like the Russells do, it will take a lot of time, a lot of down-to-earth interest, and a lot of just doing naturally the thing that binds a community together in the real Christmas spirit—the family kind that lives on and on throughout the years to come.

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PACKAGE DYEING EXTRACTING AND DRYING EQUIPMENT

- *Stainless steel perforated dye tubes & cones*
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Mill Maintenance

Don't Overlubricate Antifriction Bearings

Purpose of Lubrication

"It doesn't take much grease to keep ball bearings rolling," says the Anti-Friction Bearing Distributors Assn.

There are only two reasons why a ball bearing needs lubrication at all:

1. To protect the finely finished surfaces from rust and corrosion
2. To prevent friction between the ball complement and retainer (ball separator)

The oiling needs of antifriction bearings contrast sharply with the needs of plain or babbitt bearings. Plain bearings need oil to build up a film between the moving parts so that the bearings will operate. The speed that can be developed on plain bearings and the load that can be carried depend directly on the effectiveness of the lubricating system. With antifriction bearings, proper lubrication means the bearing will last longer.

How Much Lubrication?

The main problem in antifriction bearings is overlubrication—not lack of lubrication.

Generally, an antifriction bearing uses little lubricant. When a bearing is overlubricated, the bearing runs hot. Bearings run with a higher temperature within the bearing more often from too much lubricant than from not enough.

When plain bearings were the only type used, manufacturing plants employed oilers, armed them with grease and oil cans, and let the oilers fill every grease fitting and every oil opening. Plain bearings required this attention.

Today, the best treatment a man can give a machine equipped with antifriction bearings is to forget it's there. Plain bearings took a lot of oil; antifriction bearings don't.

When grease is used, housing should be filled from one-third to one-half full so that the grease level will be just high enough for the lower section of the balls to pass through. If a housing is too full, the soft grease will churn, which will result in heat from internal friction.

What Grease?

Look for consistency in grease for antifriction bearings. Grease should be

a little stiffer than vaseline. No. 2 or 3 automobile grease is good. A grease of this consistency is stiff enough not to churn at high speeds, yet soft enough not to dry.

The grease should be free from solids or body-giving materials—such as talc, graphite, or ground pumice—that act as abrasives after the oils evaporate.

Mineral-base greases (soda soap or lime soap), not vegetable or animal greases, should be used. Lime-base grease is preferred where a nonsoluble grease is required. Soda-base grease is a better all-round lubricant.

Oil or Grease—Which?

If the bearing housing was designed for oil, always use oil; if it was designed for grease, use grease.

Grease is good up to 4,000 rpm. It stays in the housing, and it helps to seal the housing against dirt.

If the bearing speed is above 4,000 rpm., oil is better, particularly if a circulating or splash system is used.

At higher speeds, most greases break down; the oil separates from the grease, leaks out of the housing or evaporates, and leaves undesirable caked solids.

There is one exception to this general rule. Special greases for special applications (high-speed grinding and boring spindles) have been developed to operate successfully at super-high speeds.

Grease and Oil—How Often?

Greases and oils should be added to bearings according to the severity of service conditions. No fixed rule can cover all applications, but oil should be added more often than grease.

Add oil at least once or twice a month. Add grease once a month.

Questions AND Answers

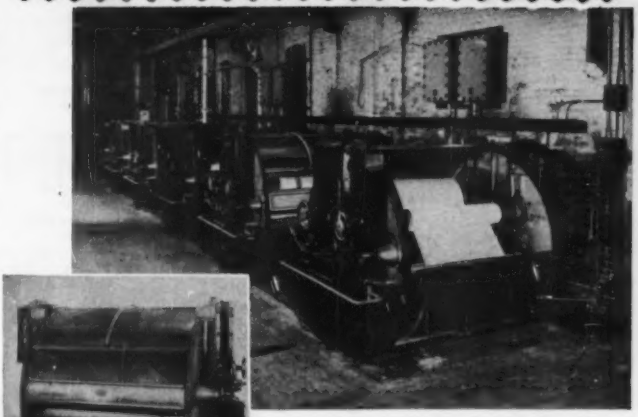
Double-Size Multifilament Nylon for Better Bond

Technical Editor:

Could you give us some information regarding the use of double-gumming techniques (double sizing) on monofilament and multifilament nylon hosiery yarns? (9598)

Monofilament yarn is not double-

NOW – for Better, Faster Dyeing of Synthetics with GLASCO DYE JIG ENCLOSURE



Enclosure in closed position

This enclosure now makes it possible to maintain controlled mean temperature throughout dyeing time of Nylons, Acetates and other Synthetics.

As a consequence, dyeing time is shortened. Uniform stripping is assured in redyeing or changing the color of a fabric. Chrome blues and other difficult colors can be jig-dyed. Colors are well dispersed, and level dyeing without shifting is possible. In soaping, temperature is prevented from rising too high and so causing a dull finish. Steam and water are saved.

Other advantages:

New design of hood saves space—no overhead obstructions, roller doors on bearings swing down and under jig when open — minimizes dripping — prevents steam blast toward operator when hood is opened — no cables, chains, counterweight posts to obstruct. Jig enclosure can be fitted to any jig — note big windows for easy observation of interior when jig is closed.

Manufacturers of modern, custom built metal equipment for wet processing uses, including Dye Jig Enclosures, Dye Tubs and Becks, Wash Tubs, etc. of stainless steel and other metals that resist corrosion under most alkali and acid conditions.

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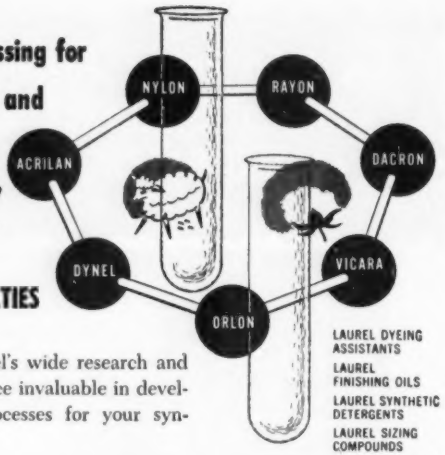

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You will find Laurel's wide research and processing experience invaluable in developing practical processes for your synthetics and blends.

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Ring Travelers are so small that they are usually ignored, until trouble occurs somewhere in the spinning or twisting.

Use STERLING Travelers, but be sure to get the correct style, and trouble will ignore you.

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sized, but multifilament yarn is double-sized on a sizing machine. The yarn is sized, dried and logged, and then sized again. The theory is that applying two thin coats of paint will bond better than one thick coat.

Percentage of size applied is usually dependent on the denier. For example, a slightly higher percentage is put on 20 den. than on 30 den. Usually, slightly less than half the total amount is applied on the first application. For example, for a total of 5% size on 20-den. yarn with PM90 size, the mill should shoot for about 2½% on the first application, and 2½% on the second application.

Another satisfactory method for double sizing is to apply the first sizing before twisting. A plasticizer is used to leave the yarn pliable.

Need No Special Equipment To Dye or Finish Corduroy

Technical Editor:

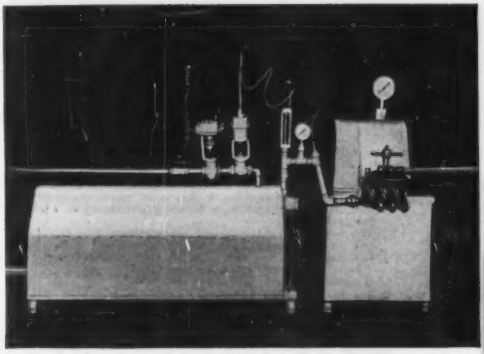
Would you give me as much information as possible about the dyeing and finishing of corduroys? (9602)

Cotton corduroy may be dyed and finished on almost any conventional type of cotton dyeing and finishing equipment. Lightweight corduroys can be dyed in becks, though care must be taken to avoid rope marks and streaks. To dye corduroy in the open width, run it on Williams-unit ranges by the pad-steam method or on jigs. Corduroys are dyed with almost any type of color. Direct, developed, sulfur, azoic, and vat colors are all applied to cotton corduroys on standard piece-goods dyeing equipment.

The main precaution to observe is not to handle the goods mechanically, because the pile would be unduly distorted. All squeeze rolls should be in good condition, and no excessive amount of pressure should be applied. It is desirable for rubber top rolls on continuous ranges to be somewhat softer than for dyeing flat goods. The primary rule in running corduroy is always to be sure that the goods enter the machine head end first. As the goods come from the pile-forming equipment, there is a definite lay to pile, and goods should be run in the direction of the lay.

If goods are dyed on jigs, the rolls should not be wound too tight and should not be too large. Dyeing time should be kept to a minimum, and tension should be carefully adjusted. Since the pile has a distinct lay, there is a tendency for the goods to creep to one side as the roll of cloth is run from beam to beam. Telescoped rolls can easily cause a rough-

Continuous size preparation and increased loom efficiency with the new



Scott & Williams Hydropulse

What the Hydropulse is: like many important developments, this unit is basically quite simple in design. It consists of a heat exchanger for heating cold starch mixes to the swelling point, and a high pressure homogenizer to convert the mixes into finished size of controlled viscosity.

What it can do for YOU: the Hydropulse will give you *continuous size preparation*. Costly batch methods have been completely eliminated. You get fresh size at the push of a button.

In addition to increased weaving efficiency you get: savings on starch costs, savings on steam costs and better process control. You can be sure of all these benefits because the Hydropulse is specifically designed for textile use by a company that has specialized in textile machinery for over 80 years...Scott & Williams, Inc.

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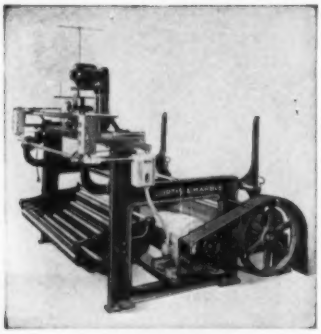

No. 55

Railway Sewing and Rolling Machine

with either Singer Head for common chain stitch seam or Merrow Head for flat butted seam.

The cloth from the loom bolt is placed in the cradle in front, and the ends are stitched together as fast as the goods are unrolled from the loom bolt, and as many pieces as desired are rolled up in a large roll ready for the next machine.
This newer model has several improvements over the older style No. 25 and No. 55 machines. The rolling-up rolls run in ball bearings, and are connected by roller chain. The front roll is driven from a brake motor by V belts. A new pattern main frame permits putting the motor inside, out of the way.

Write for our fully illustrated catalog of Cotton Machinery No. 7-51.

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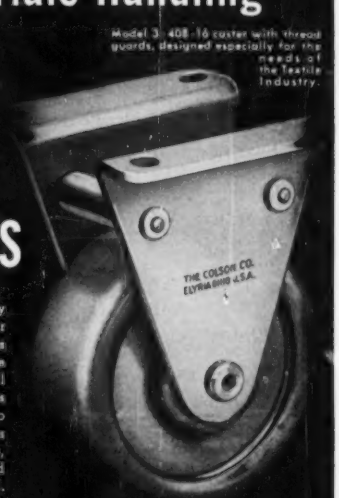
Cut Your Materials-Handling COSTS with Roll-Easy Colson Casters



Model 3-408-16 caster with thread guards, designed especially for the needs of the Textile Industry.

Rolling stock that doesn't roll easily cuts efficiency and profits in your mill. Colson *specializes* in wheels and casters engineered for the Textile Industry. They roll easily over all floors, are rust-resistant—many models have thread guards. Colson also manufactures a wide range of trucks for the Textile Industry—hand trucks, platform trucks, box trucks, drum and barrel trucks and special devices. Write us or consult your phone book for the Colson representative near you.

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ELYRIA, OHIO
CASTERS • • LIFT JACK SYSTEMS • • INDUSTRIAL TRUCKS

ing up of the pile, as well as uneven dyeing of the goods.

Corduroys, after dyeing, are usually extracted on a slot extractor, open width, after which they can be dried over cans, with due consideration to tension. Excessive tension on cans results in flattening and distortion of the pile. In going through a can range, the goods again show a tendency to creep to one side. Straightening devices are necessary here too.

In finishing, a pad, hot-flue, and hot-tenter-range setup is satisfactory. If light mixes or so-called pure mixes consisting largely of softening agents are applied to the goods, the pad may be run with the top nip down; and, depending upon the type of construction, the goods may be dipped. Where heavier mixes are run, the top nip should be raised and the cloth brought in contact either with the bottom roll or with a transfer roll so that the finish is picked up out of the box and applied only to the back of the cloth.

Corduroys are often re-brushed after dyeing to knit the pile together and to remove any pile distortion that occurred during dyeing. They also may be brushed after the application of the finishing mix for the same purpose. Some corduroys, as well as velveteens, are also painted.

Corduroys may be run over a waxing machine where a quantity of wax is applied by brushes to the pile. They are then run over a brusher to work the wax into the pile and increase the luster.

Stop the Shuttle Gently To Avoid Ropy Filling

Technical Editor:

How can we prevent filling from slipping off the bobbins during weaving? (9604)

Filling slippage may be the result of improper winding or a loom condition. Filling winders should be checked to make sure that the bobbin is wound with the proper tension; too much tension will cause excessive yarn breakage in winding and weaving. The yarn number also must be considered; coarse or two-ply yarn requires more tension than single or high-count filling. Soft bobbins should be rewound.

The picking motion on the looms should be adjusted to give a soft pick. Too much power at the drop-box side of the loom causes the shuttle to be stopped abruptly at the magazine side. This is the most common cause of filling slippage.

The shuttle check on the drive end of the loom should be set to give

about 1½ in. of easy check. The binder facing should be examined; and if it is worn hard and smooth, it should be replaced. Binder pressure should not be excessive because excessive pressure will give an improper magazine transfer.

Hard packing behind the picker can be replaced by a bumper of tightly wound cloth covered by leather. This bumper will help to absorb some of the force so that the shuttle is stopped gently.

Books of Interest

Chemical Data For Textile Men

TEXTILE CHEMICALS AND AUXILIARIES, Edited by Henry C. Speel; Reinhold Publishing Co., 330 W. 42nd St., New York 36, N. Y.; cloth, 493 pages, $10.

The ever-increasing importance of chemicals, dyes, finishing agents, and auxiliaries in today's textile industry has finally been recognized by the publishing of this single-volume compilation. Covered are the use of water conditioners; fats, oils, and waxes; starches, gums, and glues; solvents and other organic chemicals; surfactants; synthetic resins; cellulose finishes; flame-, moth-, and waterproofing agents; and other chemical products.

In addition to the well-documented and well-arranged data on the various types of raw materials used in fabric processing, over 150 pages are devoted to a discussion of the nature and processing of synthetic yarns and fabrics, with special emphasis on the chemical nature and aspects of the newer fibers and fabrics, wet-processing procedures, and fabric stabilization.

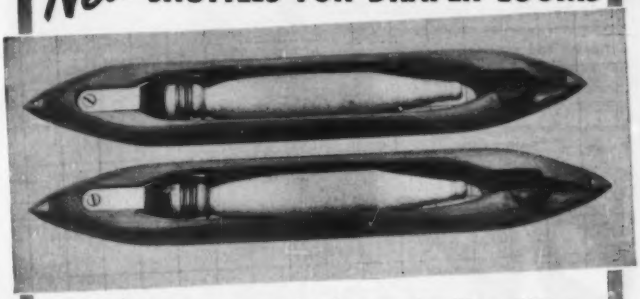
Some 29 leading chemists in their respective textile fields contributed chapters in the book. Each chapter has at the end an extensive bibliography that served as background for the author and serves as a good source for readers interested in further details on any of the subjects covered.

Surfactants Unlimited— And How They are Used

ENCYCLOPEDIA OF SURFACE-ACTIVE AGENTS by J. P. Sisley and P. J. Wood; Chemical Publishing Co., Inc., 26 Court St., Brooklyn 2, N. Y.; cloth, 540 pages, $15.

As a practical reference book on the subject of surface-active agents, this book is excellent. It is divided logically into two parts—the first giving general application information, a classification of agents ac-

New SHUTTLES FOR DRAPER LOOMS



Major shuttle improvements have long come from Watson-Williams. This time the Shuttle People have introduced two leaders in their field **— shuttles for Draper Looms, fitted with Cast Iron Eyes, to accommodate a longer filling package.**

One of them is 15¼" long, the other a standard 15¾" long. Both are equipped with 8" bobbins. The 15¼" length shuttle is designed to use a short eye to give longer bobbin length. A short eye can also be incorporated in shuttles of other lengths for Standard Draper Looms, and for C and K cotton looms to provide a maximum length bobbin.

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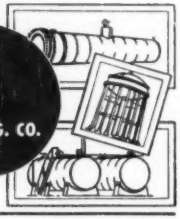

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cording to their physico-chemical properties, and a discussion of the particular properties and applications of the three classes. The second part of the book is an alphabetical compilation of pertinent data on the major commercially available surface-active agents, ranging from Acidol to Zitrol. Products from all industrial countries are included.

Among the chemicals covered are wetting agents, detergents, penetrants, antifoaming compounds, emulsifiers, and dispersing agents. An inventory of sulfonated oils and modern detergents is included, grouped into main and sub classes according to their chemical composition.

P. J. Wood has rendered a service to the synthetic-detergent field in his translation of Prof. Sisley's original French text.

Analyzing Mill Finances From Simply Kept Records

FINANCIAL MANAGEMENT FOR THE SMALL BUSINESSMAN by L. A. Tungate; Chapman & Grimes, Inc., 30 Winchester St., Boston, Mass.; cloth, 132 pages, $3.

Not all textile mills are big-time operations; a majority, in fact, can be called small businesses. The management of such concerns will be interested in practical aspects of financial management that are reviewed in this book.

Throughout the book, emphasis appears to be placed on the value of careful analysis of the financial information that is available from simply kept record keeping. Such analysis can frequently show how profits can be increased, losses minimized, and financial difficulties avoided. Broad subjects covered include budgeting, cost control, inventory control, financial statements, operating ratios, and rates of turnover.

Annual Editions Of Old Standbys

BULLETIN OF THE WOOL MANUFACTURERS, Vol. 81, 1951; National Assn. of Wool Mfrs., 386 Fourth Ave., New York, N. Y.; cloth, 414 pages, $10.

The Secretary's Report on 1951 activities of NAWM, latest statistics on woolen and worsted manufacturing, the text of Francis W. White's highly publicized address before the Greater Lawrence (Mass.) Chamber of Commerce last January, and the NAWM annual-meeting reports are included.

WHAT DOES THE FEDERATION DO? A Report of 1951 Work, by National Federal of Textiles, Inc., 389 Fifth Ave., New York, N. Y.; paper, 44 pages.

The special services as well as regular day-to-day activities of the National Federation of Textiles are itemized with a small amount of basic text to explain each service rendered.

SKINNER'S COTTON TRADE DIRECTORY OF THE WORLD, 1952, And SKINNER'S WOOL TRADE DIRECTORY OF THE WORLD, 1952
Thomas Skinner & Co. (Publishers)

Specify Class H ELECTRICAL INSULATION

...made with DOW CORNING SILICONES

to make textile motors last longer

In Spinning Bucket Motors. Over 50,000 Spinning Bucket motors in rayon mills have been rewound with Silicone (Class H) insulation during the past 4 years. These motors are exposed to acids and subjected to high starting loads. Life of Class A motors in this service ranged from a few weeks to a few months. Silicone insulated motors have been in service for more than 2 years. One large mill reported an annual saving of over $60,000 in rewind costs alone.

In dye-houses, excessive moisture limited the life of ordinary motors to 3-6 months. Rewind shops that have rebuilt such motors with Silicone (Class H) insulation report that some of the motors have now been in service for 4 years.

In pump motors, especially on centrifugal and condensate pumps, Silicone (Class H) insulation is specified by some of the largest chemical plants where operating conditions are very similar to those that prevail in the textile industry.

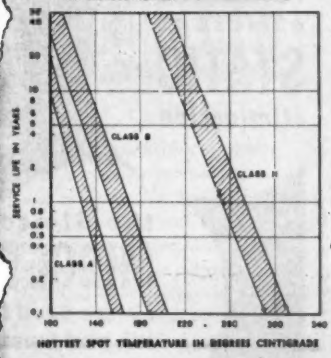
Wherever high ambient temperatures, overloads and excessive moisture or corrosive atmospheres cause premature failure, Silicone (Class H) insulation can be used to make motors last 10 to 100 times as long as they ever did before.

here's why...

Class H insulation is the most heat-stable class of electrical insulating materials available. Accelerated life testing of motors indicates that Class H insulation, made with Dow Corning Silicone Varnish 993 has an advantage of about 100 centigrade degrees over Class B insulation.

If current concepts of thermal aging are correct, this means that such Class H machines can be expected to operate as much as several hundred times as long as Class B equipment where thermal aging is the primary factor. It means that at least 7 years of continuous operation at a hottest-spot temperature of 220°C would be required to reach the minimum thermal life of silicone insulated equipment. The results of those tests are summarized in the graph below.

LIFE EXPECTANCY OF CLASS A, B, AND H INSULATION AT VARIOUS HOTTEST SPOT TEMPERATURES



HOTTEST SPOT TEMPERATURE IN DEGREES CENTIGRADE

During the past few years, these test results have been confirmed by the field performance of thousands of motors rewound with Class H insulation. These motors have been exposed to the toughest kind of service conditions in almost every industry. Silicone insulation has also been used to uprate motors by as much as 50%. It has been used to save hundreds of thousands of dollars in maintenance costs and lost production.

Send Today!

We'll be glad to send you a list of manufacturers of Class H motors or our list of rewind shops that specialize in Class H insulation. Call our nearest branch office or address Dept. AJ-24.

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Machine Interference

(Continued from page 101)

$$H = T + t$$

But when there are two or more machines in the care of one operator and random stops occur, a machine that stops may not receive immediate attention because the operator is already occupied. Waiting will occur, and productive time will be lost.

The average amount of time lost in this way by a machine in its cycle is interference time, expressed as a fraction I of the operator-attention time t.

Interference has four aspects:

1. It is more prevalent for the slower operator than the faster operator, with the same number of machines and the same type of work. This fact explains why the good operator earns bonus pay with apparent ease and the slower operator earns none.

2. Interference is more prevalent for work with a large cycle ratio p (operator time t to machine time T). This factor explains why the calculation of interference depends on the cycle ratio p.

3. Interference is more prevalent for the operator who attends a larger number of machines than for an operator who attends a lesser number of machines, with equal operators on the same type of work. This fact explains why the calculation of interference depends on the number of machines N.

4. Interference depends on chance (random stops). This factor explains why interference can be calculated on a statistical basis if the cycle ratio p and the number of machines N are known.

With the intrusion of interference, the net cycle time H becomes:

$$H = T + t + tI$$

(Since interference is expressed as a fraction of operator time, it must be multiplied by t to obtain a time value.)

Cycle time H could now be calculated as in the case of one machine if the value for I were calculated.

Tables Eliminate Calculations

With A taken from the tables, the cycle time H is obtained from the formula:

$$H = NT \div A$$

The best way to illustrate the use of the tables is through examples. *Example 1:*

The problem is to set a standard time for weaving 100 yd. of cloth. The weaver runs 10 looms. Each loom will weave 100 yd. of cloth in 5 hr., but 0.35 hr. of attention time is required in addition. Thus:

$$t = 0.35,\ T = 5,\ N = 10$$

The cycle ratio $p = t \div T = 0.07$. A (from tables) $= 8.99$ and means that each operator would be expected to pro-

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Manufacturers of
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duce 8.99 machine-running hours per hour.

Cycle time or standard time H is calculated from the formula:

$$H = \frac{NT}{A}$$

$$H = \frac{10 \times 5}{8.99}$$

$$H = 5.56$$

The standard time is 5.56 hr. per 100 yd. per machine (plus allowances for fatigue, etc.). The effect of interference is 5.56 — 5.35, or 0.21 hr.

Example 2:

The problem is to set the standard time per mile of wire. Making wire is not a textile operation, of course, but the treatment of the problem of interference is the same as for a textile operation. For this job:

$N = 5, t = 0.4, T = 2, p = 0.2$
A (from tables) $= 3.75$

$$H = \frac{NT}{A}$$

$$H = \frac{5 \times 2}{3.75}$$

$H = 2.67$ machine hours per mile

Or in operator hours:

$$H = \frac{T}{A} = 0.533 \text{ hr. per mi.}$$

The effect of interference is 2.67 — 2.4 = 0.27 hr.

Pace Differences Are Increased

The incidence of interference has some peculiar effects. Interference depends on th cycle ratio p; and when this ratio is large, the production difference between the fast and slow worker is increased. Interference causes the slower man to fall behind and the faster man to jump further ahead. The fast man works less of the hour and produces more; the slow man works more of the hour and produces less.

The load factor for an operator is the amount of time he works per hour, pxA. Working from Example 2, the standard load factor for the operation would be:

$$pA = 0.2 \times 3.75 = 0.75$$

Let us examine what happens to three men who are rated at 80, 100, and 125% of the standard pace. Since the machine-running times are the same, the differences in pace are reflected as differences in operator time t. These differences are reflected in the cycle ratio p.

A chart of the three operators shows:

($T = 2$, $N = 5$)

Pace	t	p	A	pA
80%	0.5	0.25	3.39	0.85
100%	0.4	0.2	3.75	0.75
125%	0.32	0.16	4.04	0.65

A conversion of the running time A and load factor pA to a basis of 100 for standard production shows:

Pace	% Production (from A)	% time (from pA) operator works
80%	90.5	113.3
100%	100	100
125%	108	86.6

This calculation shows clearly that the fast man produces 108% of standard with an effort of 86.6% of standard, while the

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slow man produces only 90.5% of standard with an effort of 113.3% of standard.

The effect of interference on the pace differences can be seen clearly if the efficiencies without and with interference are calculated:

Pace	Efficiency Without *I*	Efficiency With *I*
80%	80%	68%
100%	83%	75%
125%	86%	81%

The spread on each side of the standard is three points for Efficiency Without *I*, and the spread is about six points for Efficiency With *I*. Thus, interference has approximately doubled the spread. All efficiencies have been reduced, but the worker at 80% of pace has lost 12 points while the worker at 125% of pace has lost only five points.

The Formula Used by Ashcroft

The Ashcroft Tables are based on the formula:

$$A = \frac{NYn}{1 + pNYn}$$

Where:

Yn = Average number of consecutive stoppages once the spell of all machines running has been broken.

The first three values for Yn: $Y_1 = 1$, $Y_2 = e^p$, $Y_3 = e^{2p} + e^p(e^p - 1)^2$. After this point, the mathematics becomes very complicated. The formula is discussed by Ashcroft in the *Journal of Roval Statistical Society*, Series B, Vol. XII, No. 1, 1950.

AATCC Show

(*Continued from page 137*)

Alginic Acid Derivative Serves as Phenol Carrier

A new product of Kelco Co., 31 Nassau St., New York, N. Y., has been found to be a serviceable carrier for phenol when used in nylon plissé printing. Kelcoloid HV holds up to 50% phenol. The product is water soluble at any pH below 7. It serves to emulsify, thicken, and stabilize solutions and suspensions.

► Finishing resins displayed by Catalin Corp. of America, 1 Park Ave., New York 16, N. Y., included low-polymer Resin 6536 for permanent stabilizing and crease resistance, and medium-polymer Resin 2165 for stabilization, weight, and stiffness.

Wool Dyers Offered New Range

Simple dyeing procedures and exceptional fastness properties were the two main features of the new range of wool dyes presented by Ciba Co., Inc., New York, N. Y. The Cibalan colors are an assortment of twelve metal-complex dyes that are applied in a neutral or weakly acid dyebath.

The exceptional lightfastness claimed for the Cibalan range is said to bring lightfastness on wool in union dyes to the level of the best chlorantine fast colors

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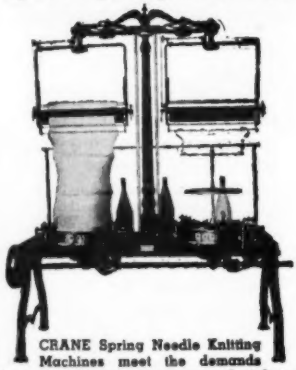

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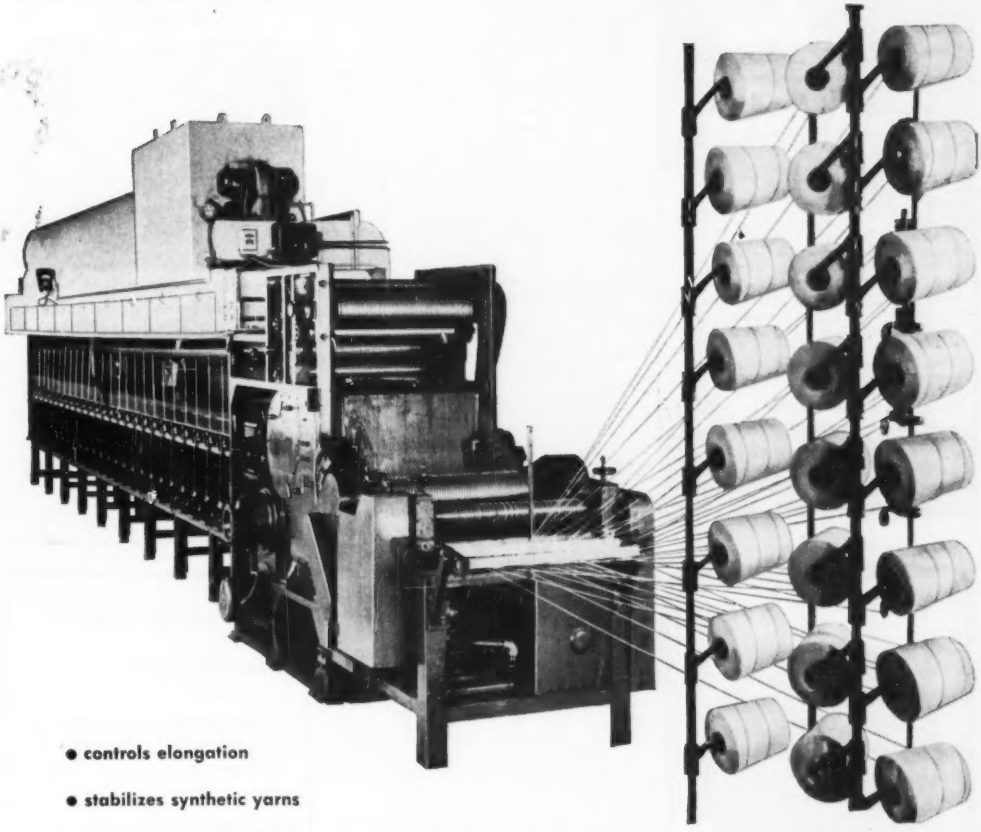

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- makes synthetics compatible with rubber and other materials by coating or impregnation

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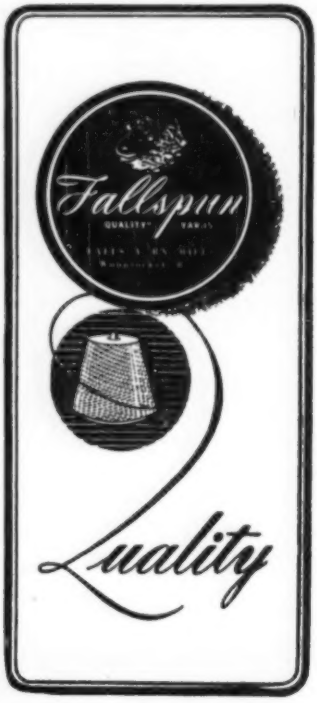


on cellulosic fibers. The new range is fast to washing, perspiration, fulling, carbonizing, and decating. Tippy wool is said to be dyed uniformly as well.

The new dyes are recommended for loose wool, tops, yarns, and piece goods. The range is also suitable for nylon and silk.

New Source of Acetic Anhydride

In keeping with their policy of expansion in the field of basic textile chemicals, Celanese Corp. of America, Chemical Div., 180 Madison Ave., New York 16, N. Y., announced the availability of a new basic source of acetic anhydride. The company has also expanded the production of acetic acid and with its new plant in Pampa, Texas, can offer greater flexibility of supply, including split-tank-car lots.

▶ General Dyestuff Corp., New York, N. Y., had three sections of interest at its booth:

1. A model of the Williams continuous rawstock fiber-processing range.

2. The Foxboro Dynalog redox method of recording and controlling the power of the dyebath to reduce the vat dye and fix it to the cloth by the Marhen process.

3. A broader line of wet-processing products from Antara Chemicals Div., including a new domestically produced vat- and sulfur-dye stripping assistant, Peregal ST (liquid), and new experimental materials on fine fabric brighteners, fulling assistants, and nonyellowing finishing agents.

▶ Water-soluble antistatic oils, designed to eliminate static generated during mill processing of natural fibers, synthetic fibers, and blends, were featured by Nopco Chemical Co., Harrison, N. J. The oils, used in emulsions, are applied to stock from standard spray equipment at such steps in processing as rawstock dyeing (last rinse), stock blending, picking, Bramwell feed, Pacific converter, pin drafting, and gill reducing. The oils scour out in finishing.

▶ Vicara, the zein fiber produced by Virginia-Carolina Chemical Corp., Richmond, Va., is now available in a bleached form. The fiber is said to be permanently white and not subject to yellowing by oxidation or sunlight.

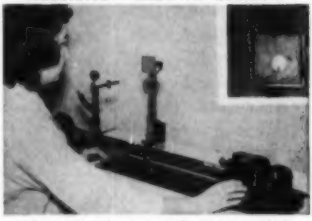
New Dyes, Bleaching Agent, And Leveling Agent Shown

A new series of dyes for wool, nylon, and silk—the Lanasyns—was announced by Sandoz Chemical Works, Inc., New York, N. Y. These colors, when dyed neutral or with small amounts of ammonium sulfate and boiled for 30 to 40 min., possess fastness properties similar to chrome dyes. The addition of 1% Ekaline F is recommended for the dyeing of yarn or piece goods and all types of nylon.

Lanasyn colors may be combined with chrome dyes for metachrome, top-chrome, or chrome-mordant work.

Felting is said to be reduced because the boiling period is shorter and is done

PRECISION TWIST TESTER
for measurement of turns per inch and take up due to twist of all yarns.
ACCURATE • EASY TO OPERATE



Standard motor driven model with additional monofilament take up device being used.
Write for descriptive literature and prices.
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Hoboken, N. J.

after you've read this magazine

. . . and clipped pertinent ideas, articles and advertisements for reference, *please do not burn or throw it away.*

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under near-neutral conditions. Duplication of shades is said to be easier because difficulties experienced with chrome colors are not duplicated. The new colors are practically unaffected by iron or copper and do not require chroming.

Two new optical bleaching agents that convert ultraviolet light to visible light and make fabrics look lighter were also introduced. Leucophor B is for vegetable fibers, and Leucophor WS is for animal fibers, acetate, Orlon, nylon, and Dacron.

Sandoz also introduced Sandolan ML, a leveling agent for the chrome dyeing of tippy wool. The product has no influence on light and crock fastness.

▶ Products highlighted at the booth of Rohm & Haas Co., Philadelphia 5, Pa., included:

1. A nylon warp-sizing agent, Acrysol A-1, that is readily soluble in water and is applicable to both filament and spun nylon yarns.

2. Rhozyme LA, an improved diastatic desizing agent that combines the uniformity, versatility, and heat stability of the earlier powder form with the economy of a liquid enzyme.

3. Rhonite R1 for imparting shrinkage control, wrinkle resistance, glazed finish, and wet strength to cotton and rayon fabrics.

4. Rhonite R-2, a thermosetting type of chemical in liquid form for improving dimensional stability of viscose fabrics.

5. Triton X-100, the company's synthetic nonionic surfactant.

▶ For improving the lightfastness of direct colors after resin-finish treatment, Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J., showed Calcodur Resin Fast Blue 2R and Calcodur Yellow 4GL.

W. TROY McWHORTER, sales engineer for Calco Chemical Div., American Cyanamid Co., Charlotte, N. C., died suddenly on Sunday morning, following the AATCC convention in Boston. His death, at 49 years of age, will sadden many who knew him in the association and in his territory.

Canadian Seminar

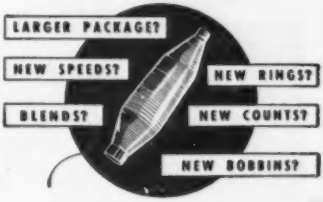
(*Continued from page 110*)

other constructional factors that affect the size, length, inclination, and shape of the fabric pores will all have effects on the level of performance obtained. And at any given pore size, the optimum results will depend on the correspondence between the hydrostatic-pressure resistance of the fabric and the amount of pressure required to force water between the surface-yarn fibers of the fabric pore wall.

(*Turn page for more papers*)

U. S. RING TRAVELERS

What YARN changes are you making?



What TRAVELER changes will they require?

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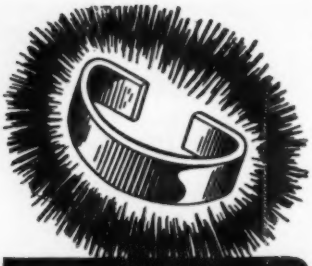

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Use an Oxalic-Acid Pretreatment Before Chrome-Dye STRIPPING of Wool

By DANIEL FRISHMAN, Harris Research Laboratories

Modern chrome dyes constitute one of the most difficult problems in stripping wool. Chrome dyes pose a special problem because they are designed to yield more stable molecules with respect to light, chemical agents, and water. It appears that the chromium not only helps form these more stable dye molecules, but it also binds the molecules to the wool very effectively.

The presence of chromium poses still another problem in the removal of color from wool. Even when the dye molecules are successfully destroyed, the remaining fragments of these molecules may form colored complexes with chromium, and frequently a serious return of color is observed in subsequent dyeing. For these reasons, it is desirable not only to destroy the bond between dye and chromium, but also to remove the chromium from the wool.

To perform these operations in a laboratory in keeping with practical mill procedures, it soon became evident that a unique set of conditions were necessary. Agents that form complexes with chromium ions, such as oxalic and citric acids, can remove chromium from wool by treatment over extended periods of time; but shorter treatments, even at the boil, were apparently ineffective for this purpose. Thus, the chromium content of chrome-dyed wool was not changed by treatment with oxalic acid at the boil for ½ hr.

On the other hand, it was observed that the oxalic-acid "pretreatment" followed by an alkaline, reductive, stripping procedure, as in the cross-linking method, resulted in much improved color removal and a considerable reduction in the chromium content.

Pretreatments with other acids did not yield enhanced stripping or any appreciable reduction in the chromium content. Similarly, simple stripping in alkaline or acid media did not result in any substantial loss in chromium. Attempts to obtain improved color removal by preceding an ordinary acidic strip with the oxalic acid pretreatment were entirely unsuccessful.

These and additional experiments indicate that agents capable of forming strong complex compounds with chromium change the state of the chromium so that it becomes soluble in an alkaline stripping bath.

It should be emphasized that stripping with reducing agents in an alkaline solution is made possible by the use of protective cross-linking agents. When these protective agents are not present, excessive damage to the wool will result.

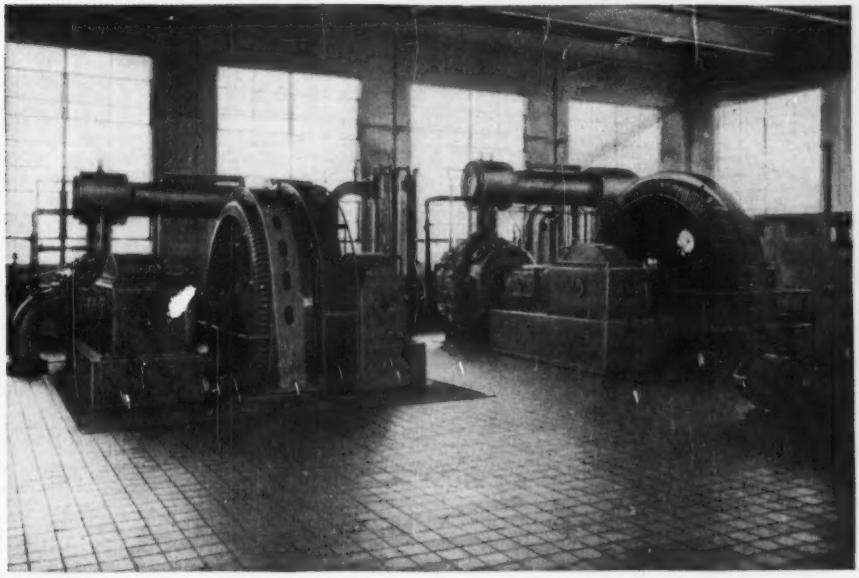
WOOL-BLEND SCOURING Requires Special Care

Blended fabrics of wool and rayon that are to be given wool-type finishes invariably contain oil. Although oil is not applied to the rayon staple, the wool itself is oiled to facilitate carding of the blend. Scouring is therefore necessary and should be carried out in such a way that, although all the impurities are removed from the gray cloth, there is the minimum adverse modification of the fabric; that is, the minimum damage is done to the wool and rayon. The cloth should have a good handle, and the scouring treatment should not cause undue loss of strength.

Most blended fabrics may be scoured with the reagents used in the best scouring techniques for wool; but in the case of blended cloths containing alkali-sensitive fibers, high concentrations of alkali should be avoided. There is much to be said for using synthetic detergents so that neutral scouring is possible. When these reagents are used, scouring time may often be cut down, especially if the pieces are not soiled.

The precise technique is determined by the nature of the cloth and of the oils present. In woolens, the oils are generally oleines (fatty acids), while neutral fatty oils are present in worsted-spun cloths. The removal of these latter impurities is greatly facilitated by blending the fatty oil with a compound such as glycerol monooleate; and if such blends are used for the wool oiling, less drastic scouring methods may be adopted.

If oleines are present, as in fabrics made from woolen-spun yarns, alkali is normally used to remove them because it functions by simple saponification to yield soap, which then emulsifies any dirt that may be present. The use of high alkali concentrations is to be avoided. One can use modified mineral oils to replace oleines as wool oils, since these oils may be removed by



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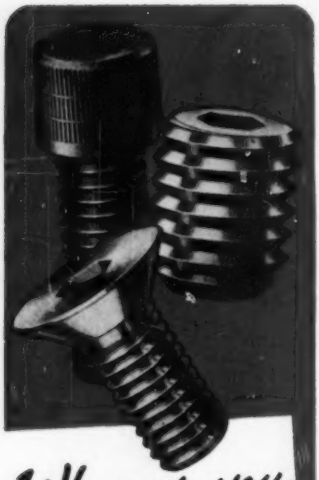

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means of neutral solutions of synthetic detergents.

There is little doubt that the oil blends of the future will be removed simply by washing in water, and the difficulty in piece-scouring will not be the removal of spinning oils but the removal of dirt. The need for this latter step can, of course, be minimized by adopting a higher standard of cleanliness in spinning and weaving.

Even when considerable care is taken, present-day scouring techniques may cause difficulties in handling blended cloths, stitching pulling away, or the cloth becoming damaged. These difficulties arise particularly when the cloth contains a high percentage of rayon.

When cloths of this type are scoured, lightweight machines should be used rather than the heavy ones employed in wool finishing at present. In certain cases, as in wool-casein fabrics, it is advisable to greasemill the cloth slightly before scouring; for by this means damage to the fabric is reduced to a minimum.

Optical YARN-EVENNESS TESTER Measures Cross-Sectional Irregularities

By W. M. PALMER, Canadian Celanese Ltd.

Description of Tester. The optical yarn-evenness tester is not essentially different from several other electronic photoelectric yarn-evenness testers described in textile literature. The only feature of our tester that is believed to be original is that provision has been made for rotating the optical system of the tester so that the instrument may be used to measure the diameter, or more correctly the circumference, of yarns that do not necessarily have a circular cross section.

We will not describe the electronic or recording sections of our tester, since standard circuits and recorder have been used. However, the accompanying diagram illustrates the principle of the tester.

The main components of the tester are a source of light, the yarn to be measured, and a photocell. The optical system is lined up with suitable slits so that the yarn casts a shadow on the photocell. The size of the shadow depends on the size of the yarn. The output of the photocell is amplified electronically and recorded automatically on a portable recorder. A second photocell is used to compensate for any fluctuations in intensity of the light source.

Although the dimensions of the rectangular slits that define the boundaries of the light passing near the yarn may be varied in accordance with the size of the yarn tested and the length of the end over which the diameter is to be averaged, we have found that a slit about ¼ in. long and 1/20 in. wide is satisfactory for measuring the diameter of most staple yarns.

Advantages of Tester. 1. The tester measures yarn diameter, which is fundamentally different from weight per unit length of yarn.

2. The tester is capable of measuring the evenness of yarns that do not have a circular cross section.

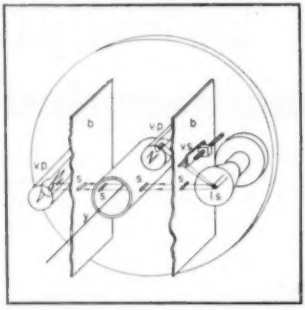
3. The evenness of the yarn is measured continuously without anyone touching, twisting, or deforming it in any way.

4. The yarn does not have to be conditioned, and evenness measurements may be made in any atmosphere.

5. The evenness of staple yarns comprised of blended fibers may be measured directly without worrying about the dielectric constants of the fibers in the blends and the uniformity of blending.

6. The coefficient of variation of yarn diameter is more or less independent of yarn count and may be used to compare the evenness of two yarns differing somewhat in count.

7. The diameter of yarns at different tensions and twists may be computed from a single diameter measurement.



CIRCUMFERENCE OF YARNS and yarn diameters at different tensions and twists can be computed from a single photoelectric measurement on this new tester. Sketch shows b—baffles, s—slits, v.s.—variable slits, v.p.—vacuum photocell, y—yarn, and l.s.—light source.

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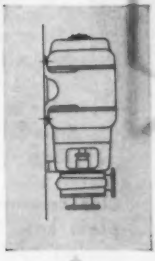
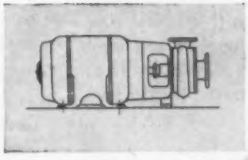
Fairbanks-Morse Builtogether Pumps are available in both single and two-stage models . . . in capacities up to 1000 gallons per minute against heads up to 550 feet. For complete information, see your local Fairbanks-Morse Branch, or write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.



Vertically



Horizontally

Angled upside down

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BOX 142

Loom Maintenance

(*Continued from page 133*)

and binders, checkstraps, and pickers are checked for wear.

Loomfixers, shift overseers, and the weave-room overseer check looms constantly for wear and for correct settings.

Step 5

Lubrication

The loomfixer cleans all oil holes and oils the entire loom at warp-outs. As a result, he knows that each bearing will receive oil when the oiler adds oil on his regular rounds.

The oiler's work is scheduled. The first-shift oiler oils the crankshaft bearings and the picking-shaft bearings three times each week. He greases the head gear once each week.

The second- and third-shift oilers service other parts by their schedule.

The maintenance work isn't expensive since it's done as part of the regular work-day schedule. The loomfixers like the program because it results in high production, first-quality cloth, and less work for them.

OILITE BUSHINGS are placed in worn bobbin disks when the battery is reconditioned. The old disk is rebored in the mill machine shop.

Textile Calendar

20th National Power Show, Grand Central Palace, New York, Dec. 1 to 6, 1952.

AATT, monthly meeting, Builders Club, New York, Dec. 3, 1952.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 5, 1952.

AATCC, R. I. Sect., annual meeting, Sheraton-Biltmore Hotel, Providence, R. I., Dec. 5, 1952.

ASME, Textile Engineering Div., full-day program, Hotel Statler, New York, Dec. 6, 1952.

AATCC, Northern New Eng. Sect., annual meeting, LTI, Lowell, Mass., Dec. 6, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Dec. 12, 1952.

CATCC, Quebec Sect., McGill University, Montreal, Dec. 13, 1952.

1953

AATT, monthly meeting, Builders Club, New York, Jan. 7, 1953.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 16, 1953.

CATCC, Quebec Sect., McGill University, Montreal, Jan. 17, 1953.

Plant Maintenance Show, Public Auditorium, Cleveland, Ohio, Jan. 19 to 22, 1953.

Air Conditioning Show, International Heating and Ventilating Exposition; International Amphitheatre, Chicago, Ill.; Jan. 26 to 30, 1953.

AATCC, New York Sect., Hotel Statler, New York, Jan. 30, 1953.

AATT, annual one-day symposium and exhibit, Hotel Statler, New York, Feb. 3, 1953.

AATCC, Mid-West Sect., Hotel Bismarck, Chicago, Ill., Feb. 14, 1953.

National Cotton Council, cotton research clinic, General Oglethorpe Hotel, Savannah, Ga., Feb. 18 to 20, 1953.

CATCC, Quebec Sect., McGill University, Montreal, Feb. 21, 1953.

AATCC, New York Sect., Hotel Statler, New York, Feb. 27, 1953.

ASTM, spring meeting, Detroit, Mich., March 2 to 6, 1953.

AATT, monthly meeting, Builders Club, New York, March 4, 1953.

CATCC, Quebec Sect., McGill University, Montreal, March 21, 1953.

ACMI, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 26 to 28, 1953.

AATT, monthly meeting, Builders Club, New York, April 1, 1953.

Carpet Fashion Bazaar, Carpet Institute, New York, April 13 to 23, 1953.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 17, 1953.

CATCC, Quebec Sect., annual meeting and dinner, Mount Royal Hotel, Montreal, April 17 and 18, 1953.

AATCC, Mid-West Sect., Netherland-Plaza Hotel, Cincinnati, Ohio, April 18, 1953.

22nd AMA National Packaging Exposition, Navy Pier, Chicago, Ill., April 20 to 24, 1953.

Fiber Society, spring meeting, New Orleans, La., April 22 and 23, 1953.

Natl. Assn., of Hosiery Mfrs., annual convention and conference, Claridge Hotel, Atlantic City, N. J., April 27 and 28, 1953.

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 27 to May 1, 1953.

AATT, monthly meeting, Builders Club, New York, May 6, 1953.

Phi Psi Fraternity, 50th annual convention, Penn-Sheraton Hotel, Philadelphia, Pa., May 7 to 9, 1953.

Materials Handling Exposition, Convention Hall, Philadelphia, Pa., May 18 to 22, 1953.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., May 22, 1953.

Textile Institute, annual conference, Llandudno, North Wales, May 25 to 30, 1953.

Canadian International Trade Fair, Exhibition Park, Toronto, Ont., Canada, June 1 to 12, 1953.

AATT, monthly meeting, Builders Club, New York, June 3, 1953.

ASTM, annual meeting, Atlantic City, N. J., June 29 to July 3, 1953.

International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf-Astoria Hotel, New York, July 27 to 31, 1953.

Fiber Society, fall meeting, LTI, Lowell, Mass., Sept. 10 and 11, 1953.

AATCC, national convention, Stevens Hotel, Chicago, Ill., Sept. 17 to 19, 1953.

Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October, 1953.

1954

Knitting and Allied Crafts Exposition, Grand Central Palace, New York, April, 1954.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to May 1, 1954.

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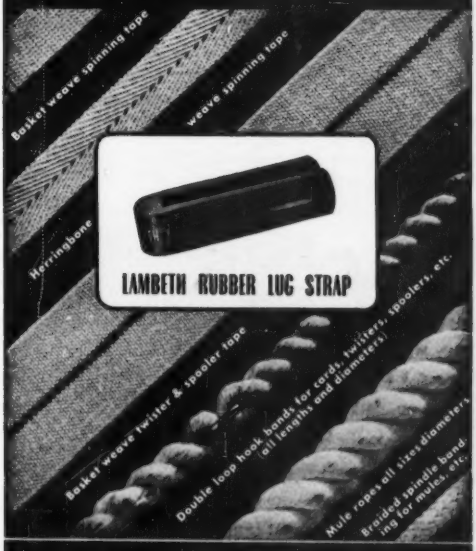
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Volatiles	5.0% max.	5.0% max.
Ash	2.0% max.	2.0% max.
pH	6 - 8	6 - 8
Viscosity (4% in water)	20 - 30 cps	35 - 50 cps
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Manufacturers of VINOL Polyvinyl Alcohol—VINAC Polyvinyl Acetate in Solid, Solution and Emulsion Form—Phenol Formaldehyde Solutions

News OF THE MONTH

CURES FOR THE ACHES

French Rhovyl shirts and underwear, reported to be capable of easing aches and pains of rheumatism, have been found soothing for patients in a Paris hospital. It appears that static electricity generated by the Rhovyl garments penetrates the aching muscles and acts as a silent cure.

The hospital is experimenting with special therapeutic bed sheets of Rhovyl also. Unfortunately the stiffness and soreness return when the patients use ordinary cotton shirts, shorts, and sheets.

VARIABLE-THICKNESS FILTER CLOTH

Dynel-Mat, multilayer webs of compacted dynel fibers, is now available in rolls in thicknesses from 1/100 of an inch to ¼ in. Highly resilient and resistant to chemicals, fungus, and insects, the new product is found suitable for lining, cushioning, and filtering uses involving severe exposure conditions.

The webs do not support combustion. They have weight and dimensional stability because of low moisture absorption (less than 1%) and non-shrinking of the fibers. Because it is thermoplastic, Dynel-Mat can be pressed into high-density sheets and can be surface formed and shape molded.

Manufacturer is The Felters Co., Boston, Mass.

ACMI TELLS QUARTERMASTER ASSN.

The total military procurement of textiles last year did not exceed 10% of the industry's over-all output and was probably short of that, according to W. A. L. Sibley, head of ACMI, in a speech before the Quartermaster Association in Atlanta. Most fabrics bought by the government are identical with products sold to the public generally or differ very little. In brief, in terms of plant facilities, raw materials, employees, and manufacturing methods, government work in process is inseparable from civilian work in process.

The ACMI head held that this fact helped explain why members of the ACMI believed that "insofar as possible, our dealings with you who are officers of procurement agencies should be conducted on the same basis as are our dealings with all other customers." Mr. Sibley also questioned the wisdom of applying provisions of the Walsh-Healey Act to the textile industry when the vast majority of textile goods are now available in the open market.

LETTER TO THE PRESIDENT

Francis W. White, president of American Woolen Co., and Harold J. Walter, head of Bachmann Uxbridge Worsted Corp., recently wrote a letter to President Truman expressing strong opposition to fees and quotas on imported wools. Both men urged the President to direct the Secretary of the Treasury to impose countervailing duties, as provided by law, on South

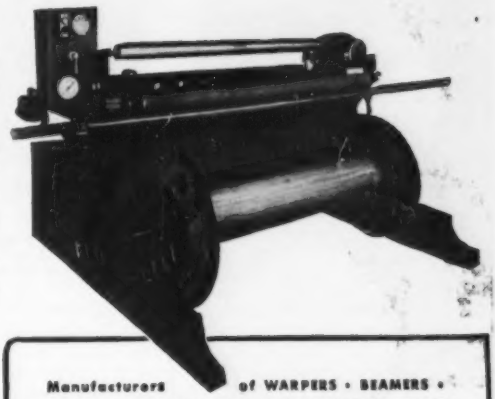
WORSTED TOP was the photographic center of attraction of this group of textile men who appeared on the program of the third annual alumni conclave in the School of Textiles at N. C. State College. Left to right are James Newnam, Du Pont Co.; William A. Newell, research coordinator at the school; Robert Dalton, Jr., Whitin Machine Works; Prof. J. A. Porter and Dean Malcolm E. Campbell, School of Textiles; C. W. Bendigo, American Cyanamid Co.; and Prof. E. B. Grover, School of Textiles.

ALLEN Model "G" High Speed Warper

PROVEN

IN DESIGN... PRINCIPLE AND PERFORMANCE

Here's a warper proven all the way . . . proven in principle and design. In production and quality of work it's making news. Here are the pay-off features built into Allen Model "G" High Speed Warper. UNIFORM END DENSITY is maintained by hydraulic pressure of beam against drive cylinder. Push button controlled VARIABLE DRIVE delivers maximum possible production on any yarn. CONTROL PANEL tells-at-a-glance yardage, yarn speed, and hydraulic pressure. Also includes control levers for beam positioning and beam pressure. SAFETY CONTROL ROD gives operator perfect control from any position . . . starts warper gradually, or jogs. EASE OF MAINTENANCE AND ACCESSIBILITY of flat friction clutch and internal brake.



Allen Warper COMPANY

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Manufacturers of WARPERS • BEAMERS • BALLERS • COMBS • CREELS • TABLE WARPERS and all WARPING EQUIPMENT. Replacement parts for SACO-LOWELL • ENTWISTLE and ALLEN WARPERS

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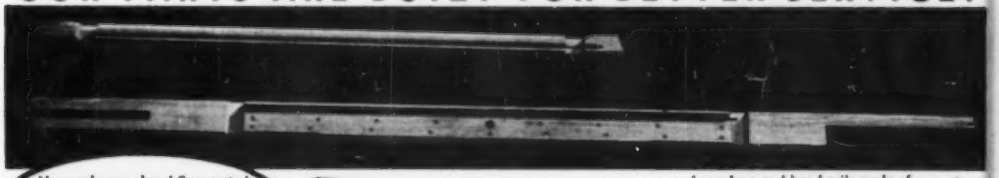


No wood screws here! Corrugated hickory reinforcing peg guaranteed to eliminate end splitting and thread catching.

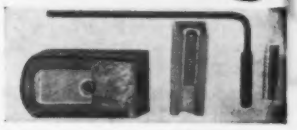
Loom Lays and hand rails made of finest kiln dried tough White Ash.

Native Hickory Shuttle Binder

Loom Jack Stick (White Ash)

Serrated Lug Block (Dogwood or Ash)

Hard Maple Compensating Block with oil impregnated wood bushing.



These seasoned hardwood loom parts are designed and manufactured for long and dependable service. Our patented interlocking metal picker holder (shown above) locks picker to stick with a bulldog grip and can be easily adjusted by removing allen-head set screw. We keep adequate supplies of all parts shown ready for prompt shipment. Order today.

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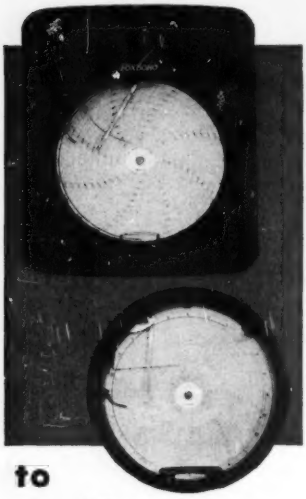

to avoid lost profits

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FOXBORO
TEMPERATURE · RECORDERS

DR. DEANE B. JUDD, seated center, was chief speaker at a joint meeting of the Philadelphia Sect., AATCC, with the Philadelphia-Wilmington Color Group in October. Others pictured are Constantin J. Monego and Edward C. Diehl, seated left and right; and standing left to right, Joseph W. MacNeil, Harry L. Morgan, and Thomas J. Scanlon.

American wool tops that are subsidized by multiple rates of exchange.

As an alternative, if fees were imposed on foreign wools, they recommended that similar fees be imposed on foreign yarns and fabrics. Otherwise such yarns and fabrics would be imported in larger quantities than at present because of the further price advantage in the U. S. that such overseas manufacturers would have.

N. C. TEXTILE MEN MEET

The North Carolina Textile Manufacturers Association is the new name chosen by Tarheel mill men for their organization at their annual meeting held recently at Pinehurst.

Matters discussed included the evils of municipal financing of textile plants, the New England attitude toward the Public Contracts Act, and possible continuous financing of North Carolina State College School of Textiles.

New officers of the association are H. K. Hallett, president; E. N. Brower, first vice president; W. H. Suttenfield, second vice president; and Hunter Marshall, secretary-treasurer.

AATT SYMPOSIUM PLANS

The American Association of Textile Technologists has chosen Feb. 3, 1953, for its second annual one-day symposium. The sessions will be held at the Hotel Statler in New York, with talks during the morning, a luncheon with a leader in the textile industry still to be chosen as speaker, and a question-and-answer discussion from the floor.

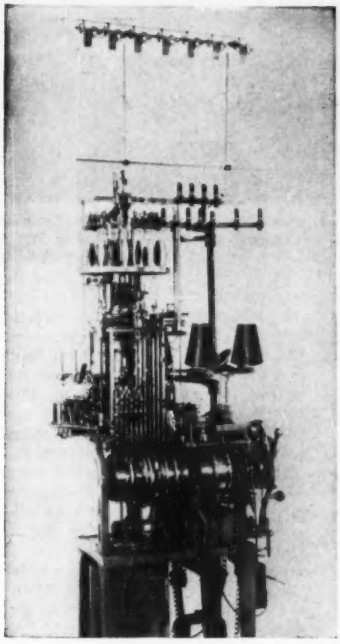
For the first time at this event, exhibits of fiber and laboratory-equipment producers will be held in conjunction with the meeting in the rotunda and parlors outside the main ballroom.

The committee planning the event is headed by Leonard S. Little, consultant, as general chairman. Exhibits are in charge of Larus R. Burgess of Cone Mills as committee chairman, with exhibit management in charge of Campbell-Fairbanks Associates.

ASTAPA ACTIVATED

The Armed Services Textile and Apparel Procurement Agency (ASTAPA)—the newly established Army-Navy-Air Force and Marine Corps purchasing organization—began operations in October at 111 E. 16th Street, New York 3, N. Y. Brig. Gen. R. P.

JAMES C. SELF, 76-year-old president of Greenwood Mills, Inc., Greenwood, S. C., was recently named "Man of the South for 1952" by Col. Hubert F. Lee, editor of the magazine, *Dixie Business*. Mr. Self is the seventh man to receive this award. Donald Comer, chairman of Avondale Mills, was the recipient in 1947.



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WESCO Engineers keep pace with the development of all new knitting machines. WESCO electric stop-motions are built in any series from 1 to 96 ends including Retractable electric needle protectors—safety controllers—hole and press-off detectors and Sentinal Press-off detectors. Manufacturers and knitters alike recognize WESCO "know-how" and "how". Specify WESCO and you get the finest.

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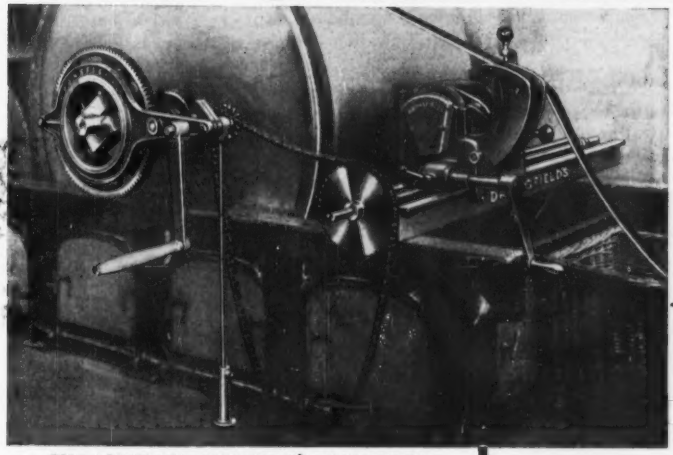
Another of a Series of Knitting Machine Builders. Others to follow

Perfect CARD MOUNTING



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SPECIALIZED DRYING, CURING AND SINGEING EQUIPMENT FOR THE TEXTILE INDUSTRY

INDUSTRIAL HEAT ENGINEERING CO.
GREENVILLE SOUTH CAROLINA

DELEGATION CHAIRMEN from five major cotton-textile manufacturing countries that sent representatives to the International Cotton-Textile Conference in England included Dr. W. T. Kroese (Western Europe), K. Laibhai (India), K. Abe (Japan), Sir Raymond Streat (United Kingdom), and Bob Stevens (U. S. A.).

Hollis, USA, formerly in command of the New York Quartermaster Procurement Agency, is chief of the agency staff.

ASTAPA is expected to achieve improved efficiency and economy in the buying of clothing, footwear, textiles, and related supplies for use by the four military services both at home and overseas. The organization will be supervised by a directorate of top brass from Washington, who in turn are subject to policy control by the Munitions Board.

WOOL-MEN'S DILEMMA

The U. S. must import about two-thirds of its apparel-wool requirements. The 1949 arrivals of foreign-made wool tops in this country amounted to 2,195,000 lb. for the entire year. In 1952 the monthly rate of import from South America alone is about the same as the 1949 total. Delay in action by the U. S. Treasury in imposing countervailing duties on subsidized South American wool tops stems from the Truman Administration's concern for unfavorable international reaction.

According to Ames Stevens, president of the National Association of Wool Manufacturers, New York, the indiscriminate imposition of import fees and quotas, which the Truman Administration favors, would provoke far greater and more readily justifiable unfavorable international repercussions than a countervailing duty aimed directly at the source of subsidy.

Wool men are also concerned about the pricing of wool out of domestic-market use more and more, especially in the light of continued man-made fiber expansion.

COTTON CONNIVES WITH CHEMISTRY

The wedding of cotton and chemistry is opening new horizons for American cotton interests, according to Robert C. Jackson, executive vice-president of American Cotton Manufacturers Institute, Charlotte, N. C.

Just as chemistry brought the textile industry a host of specialized synthetic fibers, it is now bringing specialized properties to the natural fibers "and in particular to cotton," he told the Boston, Mass., Conference on Distribution. Referring to recent discoveries of how fundamental molecular changes are brought about in the cotton fiber itself by chemical treatments, he said "epochal developments" from research have "shattered" traditional concepts of the cotton fiber's performance.

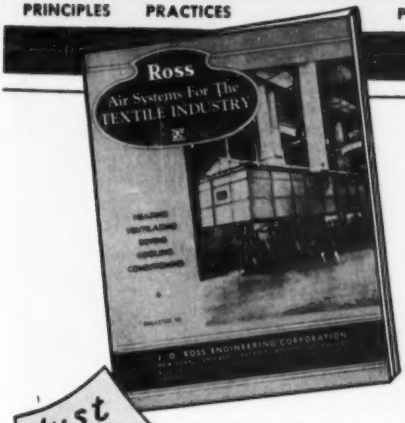
As a result, he added, the industry already has cottons that will not burn and cottons so different that they dissolve in water to leave delicate lace fabrics. He spoke of fabrics of springy, wrinkle-free cotton with the softness and warmth of cashmere, and cotton textiles that "resist heat, shed soil, and wear like iron."

Many of these products have reached or are approaching the point of commercial production while others are still in the laboratory stage, he said, but all give proof that "to cotton's familiar characteristics has been added a whole new range of properties whose limit is still unknown."

HESSLEIN TEXTILE BUILDING at Fairleigh Dickinson College, Rutherford, N. J., was dedicated in October. George W. Walker, president of Hesslein Co., which gave $50,000 toward the building, and Herbert K. Mauersberger (above), director of the school's textile department, were among those who helped lay the cornerstone. A total of $90,000 was saved in the cost of the 10-room building by construction work that was done personally by faculty and students.

A New 20 Page Bulletin For Textile Executives

PRINCIPLES PRACTICES PICTURES



Just Published — a letter will bring YOUR copy!

Probably no other single factor has contributed more to the recent advances in producing and converting textiles than the modern, more scientific use of AIR in processing.

Here in this new bulletin is the knowledge, experience and achievements gained from more than 30 years of working with textile and paper mills to produce more and better products—faster and more economically—with AIR.

How and why ROSS Systems are being used throughout the industry to prevent spoilage and plant deterioration, improve working conditions, heat, cool, ventilate and speed drying—is explained in detail. Sources of heat, types of enclosures, methods of handling materials are among subjects treated.

Any textile executive seeking to improve production and reduce operating costs can profit from the pages of this Bulletin No. 30. For your copy write to.—

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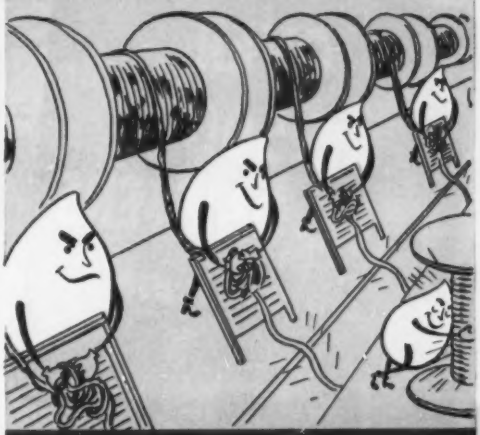
HOW TO GET FIBERS CLEAN



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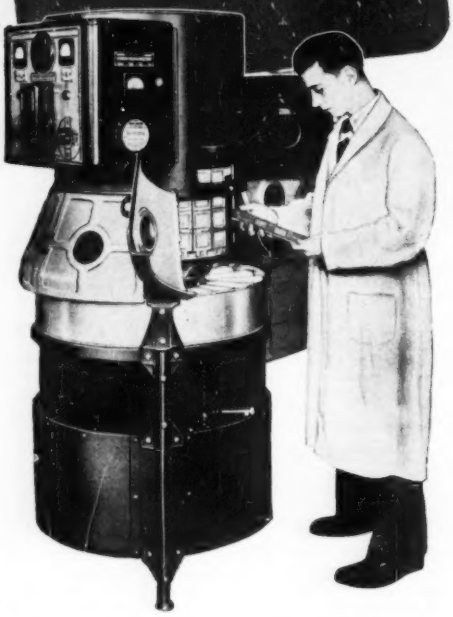

for maintaining quality control in the manufacturing of a wide variety of products from all kinds of textiles including many types of synthetics, to printing inks, plastics, wallpaper, and any product subjected to the deteriorating effect of sunlight in use. This machine is also widely used for testing the fading, and resistance to sunlight of many new products now in the process of development. Positive, dependable results can be obtained in the laboratory in a fraction of the time required by any other method of testing. Exact duplication of tests can be made at any time in the process of improving the resistance to sunlight of any product. *Write for complete information and scientific data on the operation of the Atlas Fade-Ometer.*

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264 For more information, write direct or use Reader Service post card.

NEWS ABOUT Suppliers

Equipment Suppliers

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has named J. D. Greensward vice president and director of manufacturing of the general machinery division. P. F. Bauer has been named general manager of the Norwood Works and manager of the firm's apparatus department to succeed Mr. Greensward.

American Air Filter Co., Inc., Louisville, Ky., has named John Hellstrom vice president and director of sales of all AAF and Herman Nelson products. He returned from San Francisco, where he organized and managed the Pacific division, to assume his new duties.

Barber-Colman Co., Rockford, Ill., has announced the following personnel changes in the Wheelco Instruments Div.: Richard K. Hungerford, district manager of the Baltimore office, transferred from New York; Gordon Hubbert, formerly in the Chicago office, now district manager in Detroit; Howard P. Berger, transferred from Baltimore to Cleveland; Harold F. Dahlke, transferrred from Chicago to New York.

Barco Mfg. Co., Chicago, Ill., has appointed Robert E. Mason & Co., 1726 Hutchison Ave., Charlotte, N. C., to handle sales of Barco rotary and flexible steam joints in North and South Carolina.

Cutler-Hammer, Inc., Milwaukee, Wis., has appointed M. R. Brice division manager, industrial control sales. P. C. Foote has been made assistant manager, foreign sales.

Fielden Instrument Div., Robertshaw-Fulton Controls Co., Philadelphia, Pa., has announced that the Fielden Instrument Corp. has become a division of the Robertshaw-Fulton Controls Co., Greensburg, Pa.

Robert Gair Co., Inc., New York, N. Y., has made the following appointments: Russell D. Scribner, division manager of the Thames River mill and box shop; James C. How, assistant to the manager of industrial relations, New York office; John H. Scholl, personnel manager, Haverhill Boxboard Div.; Stuart R. Bagni, personnel manager, Eastern States Cartons Div.; Charles A. Stark, personnel manager, Boston Corrugated Box Div.; and Arthur J. Beilein, personnel manager, Tonawanda Boxboards Div.

DONALD H. WALKER has been made assistant treasurer of Goodyear Tire & Rubber Co., Akron, Ohio. He succeeds Harry W. Hillman, who was recently made comptroller.

Glenwood Machinery Associates, Inc., East Orange, N. J., has appointed R. E. L. Holt, Jr., & Associates, Greensboro, N. C., as its representative in the states of Virginia, North Carolina, South Carolina, and Tennessee.

Herr Mfg. Co., Buffalo, N. Y., has named William W. Woodard, of Charlotte, N. C., formerly associated with H & B American Machine Company, as sales engineer.

Howard Bros. Mfg. Co., Worcester, Mass., has announced that T. J. Jackson has joined its organization as sales representative to serve the field formerly covered by K. M. Crytz, who has resigned.

Hyster Co., Portland, Ore., has transferred the industrial truck sales and service departments, Eastern division, to Danville, Ill., from Peoria, Ill., its former headquarters.

WOOL BLENDS SYNTHETICS

TEXTILE MACHINES S. P. A..

Isotta Fraschini

Deliveries 2 to 3 months

CONTINENTAL COMBING AND SPINNING MACHINERY

MELANGE INTERSECTING GILL BOX built with 2-5 heads, ball or can creel and ball or can delivery.
Melanger insures perfect blending of dyed top yarns, heather colors and blends of wools and synthetics.

RECTILINEAR COMB for wools and synthetics for first combing or recombing. With can or ball creel, optional equipment: coiler, stop motions, monoshot lubrication.

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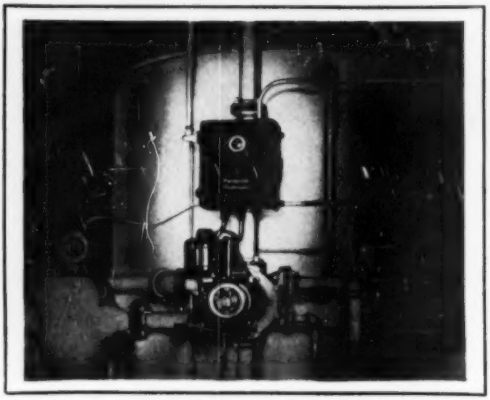

Permutit Water Conditioning Equipment

Getting synthetics to take a dye is tough enough without worrying about proper boil-off of the gray goods, maintaining the shade of the dye and providing a really good final wash and rinse.

Yet unless you have pure soft water—and plenty of it—these are only the beginning of your worries!

That's why Permutit Fully Automatic Water Softeners are in such demand! They offer a fast, sure and inexpensive means for producing zero-soft water free of damaging impurities. Moreover, Permutit Automatic Controls assure you of a constant supply, save operator's time and eliminate the danger of human errors.

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WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

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News About SUPPLIERS (Continued)

J. M. Nash Co., Milwaukee, Wis., has appointed Ralph Gossett & Co., Greenville, S. C., its representative in North Carolina, South Carolina, and Virginia for textile machines manufactured by the company.

J. C. Paddock Co., Spartanburg, S. C., has appointed Kane Textile & Supply Company, Atlanta, Ga., to handle its line of trucks, boxes, and special materials-handling equipment for the state of Georgia.

Parrott & Ballentine, Greenville, S. C., has announced that Samuel H. Huffstetler has joined the firm, manufacturer's agents for Smith, Drum & Co., Van Vlaanderen Machine Co., H. Brinton Co., and Haskell-Dawes Machine Co. Until he joined the firm of Parrott & Ballentine he was employed by Burlington Mills Corp. He will make his headquarters at 932 Hill Street, Greensboro, N. C.

Proctor & Schwartz, Inc., Philadelphia, Pa., has transferred Warren Dickinson, Jr., to the Chicago office of the Dryer Div. He will work with Louis P. Tiers, manager.

Southern States Equipment Corp., Hampton, Ga., has announced that J. H. Canady has joined its sales force. For the past four years, Mr. Canady has been superintendent and manager of the Montgomery Cotton Mills. He has had approximately 25 years of cotton-textile experience.

Stein, Hall & Co., Inc., New York, N. Y., has announced the resignation of Oliver H. Clapp as vice president and director.

Synthane Corp., Oaks, Pa., has announced the retirement of Lewis C. Rowland, superintendent of fabrication, after 22 years of service. E. Eldridge Smith has been made sales manager to succeed Herbert Widdop, who became manager of the order and service department.

RONALD E. KINNEY, JR., has been appointed sales engineer for U S Bobbin & Shuttle Co., Lawrence, Mass. He will serve all manufacturers of man-made fibers and monofilament yarn.

Wagner Electric Corp., St. Louis, Mo., has named Arthur H. Beasley manager of its Memphis sales branch. Mr. Beasley succeeds A. Callaway Allen, who recently became sales manager of the electrical division.

Warren Belting Co., Inc., Worcester, Mass., has appointed Textile Mill Supply Co., Providence, R. I., to distribute exclusively its line of leather products in Rhode Island.

Worthington Corp., Harrison, N. J., has announced that headquarters for the sales, engineering, and production of Multi-V-Drives and Allspeed Drives have been consolidated at the Oil City, Pa., plant. The division will be known as the Mechanical Power Transmission Div. Sales functions will be under the direction of D. E. Tessendorf, manager, and H. W. Kumro, assistant manager.

Chemical & Yarn Suppliers

Amalgamated Chemical Corp., Philadelphia, Pa., has appointed Robert N. Pennie research director to succeed Hillary Robinette, Jr., who resigned to establish a consulting business.

American Resinous Chemicals and American Polymer Corporations, Peabody, Mass., have appointed G. S. Robins & Co., St. Louis, Mo., as their representatives in eastern Missouri, southern Illinois, western Tennessee, and Arkansas.

Atlantic Chemical Co., Centerdale, R. I., has announced that Ernest Nathan and Henry Papini have joined with Hugh Bonino and Joseph Buonanno in the management and ownership of the company. Both

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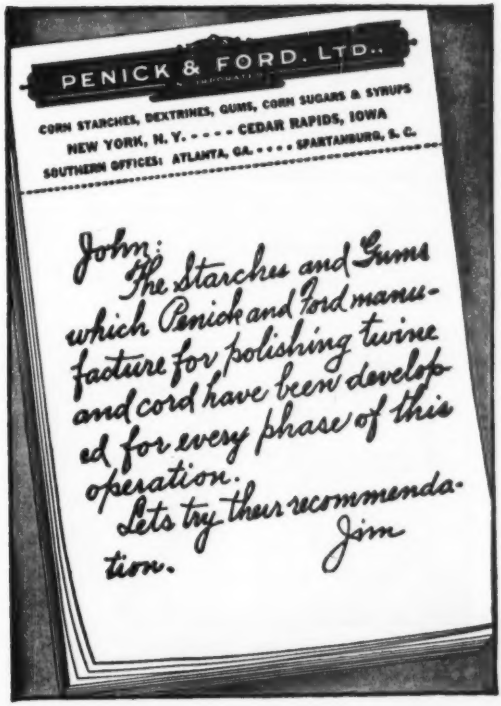
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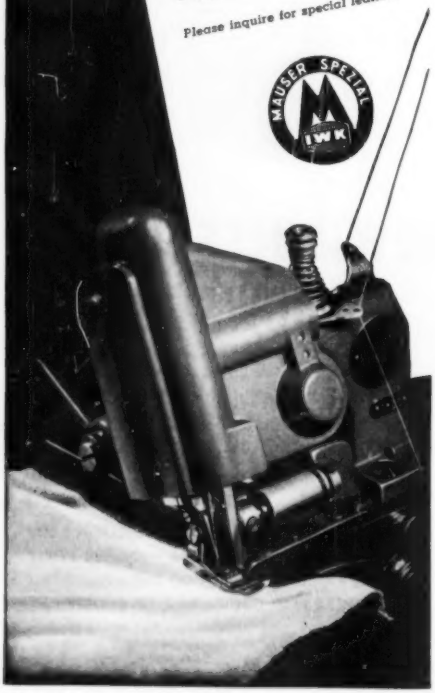

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News About **SUPPLIERS** (Continued)

Mr. Nathan and Mr. Papini were former Warwick Chemical Co. and Sun Chemical Corp. executives. Ernest Nathan, founder of the Warwick Chemical Co. in 1930 and most recently vice president and chairman of the chemicals group at Sun Chemical Corp., will become chairman of the board of Atlantic Chemical Co., Inc. Mr. Papini's new office will be in Greenville, S. C.

Atlantic Refining Co., Philadelphia, Pa., has appointed Alfred H. Milask Eastern sales manager of chemical-products sales and transferred him to the company's headquarters in Philadelphia. Since 1948 he had been sales representative for Atlantic's Southern territory, operating out of the regional offices in Charlotte, N. C. He has been succeeded at Charlotte by Willard E. Smith, who joined the company after nine years' experience in chemical research and sales engineering in the Southern textile industry.

Colloids, Inc., Newark, N. J., manufacturers of processing chemicals, has made Harland C. Pruett general manager of Colloids of Carolina, Inc., High Point, N. C. Since 1950 Mr. Pruett has been associated with Textron Southern, Inc., as division manager of the Williamston, Hartwell, Honea Path Div.

The Dobeckmun Co., Cleveland, Ohio, has appointed Arthur Gould to the newly created position of product manager, Lurex Metallic Yarn Div. Mr. Gould will coordinate the manufacture and distribution of Lurex. His headquarters will be in Dobeckmun's branch office at 250 W. 57th St., New York, N. Y.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has consolidated the Boston and Providence sales organizations of the Dyes and Chemicals Div. into a new organization to be known as the New England district. Robert R. Farwell and Harold L. Sager, manager and assistant manager respectively of the Providence district, will have the same positions in the new organization. Walter H. Zillessen and George H. Smith, formerly manager and assistant manager respectively of the Boston district, will continue as manager and assistant manager of the New England district of the Rubber-Chemicals Div.

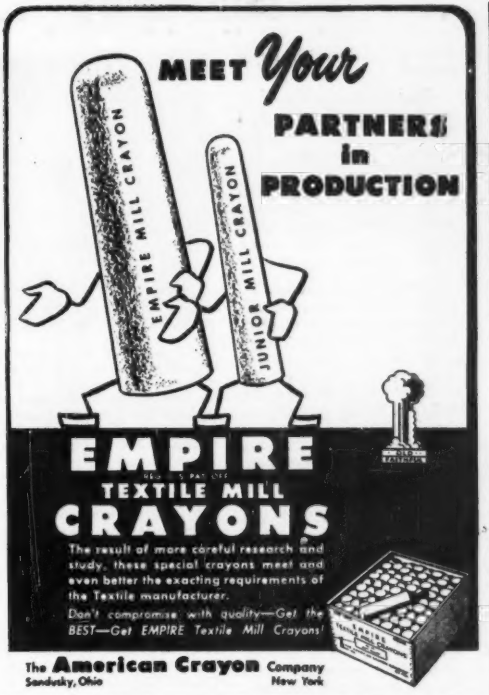
Emkay Chemical Co., Elizabeth, N. J., has appointed Russell Hutchinson to its sales staff. Since his discharge from the armed forces, he has been with Hudson Piece Dye Works and Warwick Chemical Co.

Firestone Plastics Co., Pottstown, Pa., has announced the appointment of Kenneth L. Edgar as sales manager of Velon products. Mr. Edgar succeeds Elmer French, formerly vice president in charge of sales, who resigned recently.

Heyden Chemical Corp., New York, N. Y., recently elected John P. Remensnyder to the newly created office of chairman of the board. Simon Askin was elected president, and Barrett Brown, partner of R. W. Pressprich & Co., was elected a director to take the

RENALD L. LAMONTAGNE has been appointed to represent Hemphill Co., Pawtucket, R. I., in all of Canada.

CECILIO DE SOTO has been put in charge of textile resin sales for Cyanamid de Mexico, American Cyanamid Co.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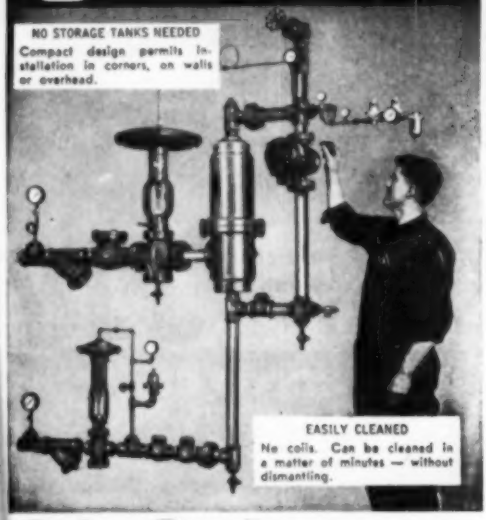
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News About SUPPLIERS (Continued)

place of Dr. Donald B. Keyes, resigned.

Hooker Electrochemical Co., Niagara Falls, N. Y., has appointed Thomas E. Moffitt Western manager. Horace W. Hooker, Jr., has been appointed Western sales manager to succeed Albert H. Hooker, who has taken an extended leave of absence on the advice of his physician.

Libbey-Owens-Ford Glass Co., Toledo, Ohio, has made the following assignments: C. Frederick Moore, a mechanical engineer, has been appointed field sales representative of the Fiber-Glass Div. in Philadelphia; Arthur S. White, originally assigned as sales representative of the division in Kansas City, has been shifted to Chicago; Robert W. Andree has been appointed sales representative of the division in New York; and Ralph G. Cox was named field sales representative in the Charlotte, N. C., area.

Organic Intermediates, Rahway, N. J., has recently been formed to serve as a clearing house for the sale of dyestuff intermediates manufactured by the smaller dyestuff concerns. The company will also act as sales agent for chlorophyll and derivatives manufactured by the Chlorophyll Corp. of America.

Pittsburgh Coke & Chemical Co., Pittsburgh, Pa., has

JAMES D. DEAN retired recently after 37 years of research and development work. During most of the past decade he was head of the Southern Regional Research Laboratory's Cotton Chemical Processing Div. in New Orleans, La.

appointed Duncan J. MacLennan New England sales representative for the plasticizer division, with headquarters at 79 Knollwood Road, West Hartford, Conn.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., Fiber Glass Div., has established new offices at Chicago and Detroit. Charles E. Barby will serve as Detroit district sales manager, with offices at 6045 Hamilton Avenue. Charles B. Keown will serve as Chicago district sales manager. His headquarters will be at the Engineering Building, 205 W. Wacker Drive, Chicago.

Other Services

Barnes Textile Associates, Inc., Boston, Mass., has announced that Donald K. Woodard has returned to the company as a vice president. He will be located in the Spartanburg, S. C., office. Mr. Woodard recently left a post with Dan River Mills, where he was assistant to the president.

N. T. Gates Co., Philadelphia, Pa., packaging-materials designers and suppliers, have moved to larger quarters in the Drexel Building, 5th and Chestnut Sts.

Georgia Institute of Technology, Atlanta, Ga., has received a gift of $350,000 worth of textile machinery. The A. French Textile School at Tech was given the machinery by The Textile Education Foundation, Inc.

Arthur D. Little, Inc., Cambridge, Mass., has established an International Div. A. G. Haldane, formerly with U. S. Dept. of Commerce, will head up the new division.

National Starch Products, Inc., New York, N. Y., has opened a new research laboratory at Plainfield, N. J. Called the Alexander Research Laboratory, the new plant will devote a large part of its facilities to resin research.

Rohm & Haas Co., Philadelphia, Pa., has awarded its H. Webster Thomas Memorial Scholarship to David J. McKenna of Lowell, Mass. The award pays $500 per year for four years to the Lowell Textile Institute freshman.

Foster D. Snell de Mexico, Mexico City, has increased the scope of its activities to offer its contracts, offices, and experience to business and professional people who want to avoid personal trips to Mexico.

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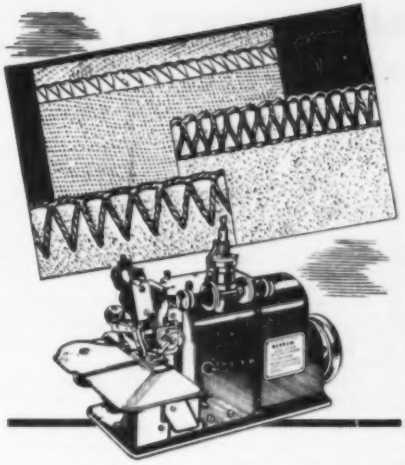
Let us demostrate the work of these machines on swatches of your fabrics.



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These services will be under the direction of Mr. Peter M. Fekula now affiliated with Barnes Textile Associates, Inc. They will complement our established consulting activities in the fields of general engineering, industrial engineering, cost and quality control, materials handling and industrial relations.

Mr. Fekula has had broad experience in a variety of industries in both consulting and operating capacities. Recently he completed an outstanding project for a well-known textile company which brought about close coordination of production and sales. He has been able to apply to textiles many of the principles which have proved so successful in the automotive and aircraft industries.

We will be pleased to give further information about the services rendered by our new Peter M. Fekula Division, as well as by our other departments.

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NEWS ABOUT Mills

Cotton Mills

Alice Mfg. Co., Easley, N. C., is constructing a new plant to manufacture print cloth. Completion is expected in twelve months.

Belrug Mills, Inc., Greenville, S. C., will erect a modern mill that will be used for the manufacture of cotton floor coverings.

Bamberg Textile Mills, Bamberg, S. C., has approved an expenditure of approximately $30,000 for additional improvements in the carding and spinning departments.

Carolina Mills, Inc., Dillon, S. C., has been purchased by a corporation headed by David H. Brown of New York. Mr. Brown will be president and treasurer of the corporation and W. M. Nicholson of Summit, N. C., vice president.

Clifton Mfg. Co., Converse, S. C., has begun production in its new No. 9 mill. At present 100 Model X-2 Draper looms are in operation. When the mill is fully equipped, 600 of these looms will be in operation.

Clinton Cotton Mills, Clinton, S. C., is constructing an addition to its No. 2 plant that will add 100,000 sq. ft. to its manufacturing space. An additional 20,000 ft. will be used for cloth storage and shipping.

Dan River Mills, Inc., has opened a new Canadian sales office in Montreal. Fred L. MacAskill is head of the new office.

Fulton Bag & Cotton Mills, Inc., St. Louis, Mo., has let a general contract to Robinson Construction Co., St. Louis, for a new one-story mill and warehouse. Sturdy, Farrar & Majers, St. Louis, is the architect.

Hartwell Mills, Hartwell, Ga., is building an extensive recreation center for its employees in honor of the late John H. Cheatham.

Herdmans Threads, Inc., Watertown, Mass., was recently incorporated to manufacture cotton threads and yarns. Joseph Cryan, president of the Textile Thread Co., Watertown, Mass., is president of the new company, and J. B. Condon is treasurer.

Kilburn Mills, New Bedford, Mass., has completed its $2,000,000 finishing plant in Tryon, N. C. The project was supervised by Fiske-Carter Construction Co., Greenville, S. C.

Laurens Mills, Laurens, S. C., recently completed an expansion and improvement program that cost $1,250,000. The personnel has been increased by 10%.

Monarch Rug Mills, Dalton, Ga., has begun operations in its new plant. A further expansion is underway in the dyehouse.

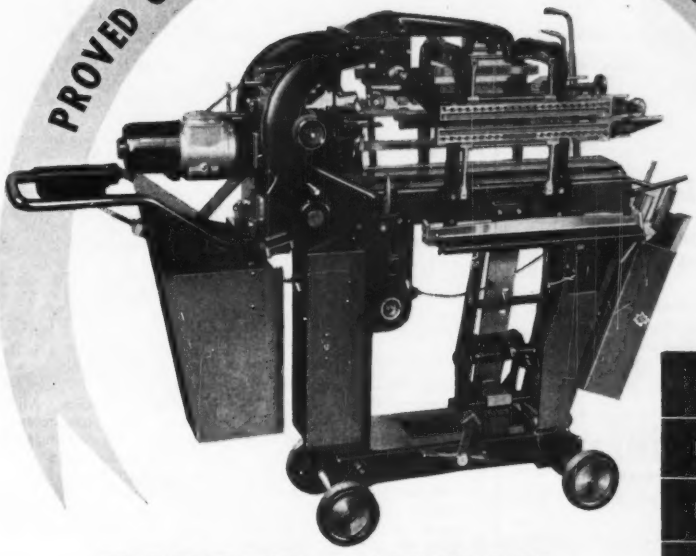
National Automotive Fibres, Inc., Detroit, Mich., is expanding its Canadian operations by constructing a new plant in the area of Toronto. This subsidiary will be known as Canadian Automotive Trim Ltd. It is expected to be completed by June, 1953.

Newman Cotton Mills, Newman, Ga., is installing new stainless steel dyeing equipment and Warner & Swasey pin-drafting machines. Additional spinning equipment will be installed at a later date.

Pepperton Cotton Mills, Jackson, Ga., has awarded a contract to Fiske-Carter Construction Co., Greenville, S. C., for a one-story extension. J. E. Sirrine Co., Greenville, is the architect and engineer.

Republic Cotton Mills Div., J. P. Stevens & Co., Great Falls, S. C., will build an addition to its local mill No. 2. This project is part of a general expansion and improvement program at the mill that will cost over $1,000,000.

PROVED ON ALL TYPES OF FIBERS *and* FABRICS INCLUDING . . .



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News About MILLS (Continued)

Superba Mfg. Co., Greenville, S. C., will occupy the former Steel Heddle Mfg. Co. plant on E. McBee Ave. The company will install 100 Draper looms.

United States Rubber Co., Textile Div., will consolidate its consumer-fabrics weaving operations, formerly divided between Seaboard Mills, Burlington, N. C., and Winnsboro Mills, Winnsboro, N. C., at Winnsboro.

Verney-Corduroys Ltd., and **Olympia Corduroy Ltd.**, are centralizing some of their operations in Granby and St. Hyacinthe, Que. This centralization will improve service and reduce manufacturing costs.

Washington Mfg. Co., Tennille, Ga., has been granted permission by the Defense Production Administration for mill expansion and improvements. Details of the expansion program are not yet available.

Woolen and Worsted Mills

American Woolen Co., New York, N. Y., plans to reopen its Puritan Mills, Plymouth, Mass. Wool blends with Dacron, Orlon, and other fibers will be produced.

Artex Woolens Ltd., Hespeler, Ont., has purchased the Rosamond Woolen Co., Almonte, Ont. Orders have been placed for new machinery to be installed at Rosamond.

Bonte Spinning Co., recently formed, has leased approximately 95,000 sq. ft. of floor space in the idle Riverside Worsted Co., Woonsocket, R. I. The new organization is headed by Eugene A. Bonte. Andrew R. Bonte and Albert E. Bonte will be vice president and general manager, respectively.

Canadian Worsted Mfg. Ltd., St. Thomas, Ont., is adding 5,000 sq. ft. of space to its processed wool and nylon plant. Further expansion is planned.

Collins & Aikman Co., Bristol, R. I., has placed its new finishing department in operation. The mill has been converted from the manufacture of upholstery plush to fine worsted men's wear.

Downs Carpet Co., Inc., Philadelphia, Pa., has let a $40,000 contract for alterations to its weave room. Edgar M. Wambold, Philadelphia, is the general contractor.

Guilford Woolen Mills, Guilford, Me., has recently completed the modernization of its finishing department. Two floors are being added to its main building. New high-speed looms will be installed on the additional floors.

Maitland Spinning Mills, Listowel, Ont., a subsidiary of Mercury Mills, Hamilton, Ont., has been taken over by Spinrite Yarns & Dyers Ltd., a new company that is headed by D. D. Hay, Toronto. The production of hand-knitting yarn is being discontinued and production will be confined to yarns for commercial knitting.

Rock River Woolen Mills, Janesville, Wis., has let a contract to T. S. Willis, Janesville, for a one-story addition that will be used as a wool storage warehouse. The cost will be about $75,000. Arthur Kuenzi, Watertown, Wis., is the engineer.

Synthetics Mills

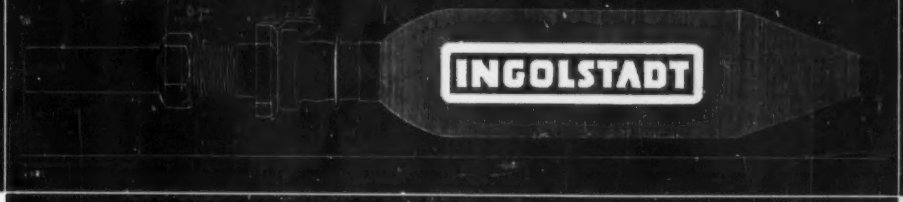
Burlington Mills Corp., New York, N. Y., has purchased the stock of Peerless Woolen Mills. There will be no change in personnel or policy.

Celanese Corp. of America, Rock Hill, S. C., is proceeding with the construction of an $875,000 addition. Daniel Construction Co., Greenville, S. C., is in charge of the project. The expansion was authorized in 1951 by the Defense Production Administration.

Fibre Products, Inc., Mount Holly, N. C., has changed its name to Holly Mills, Inc. This mill is a unit of the American & Efird Mills, Inc.

Industrial Rayon Corp., Cleveland, Ohio, plans to construct a one-story addition to its plant. The cost of the projected addition, including equipment, is estimated to be $500,000. Osborn Engineering Co., Cleveland, is the architect and engineer.

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!



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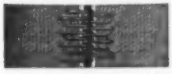

Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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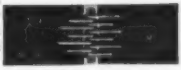

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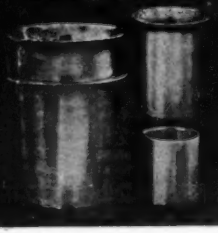

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News About MILLS (Continued)

International Latex Corp., Dover, Del., has let a contract to B. J. Fallon, Inc., Chicago, Ill., for a new branch plant on West 44th St., Chicago. The cost is reported over $250,000. A. Epstein & Sons, Chicago, is the engineer.

National Mallison Fabrics Corp., Buena Vista, Va., has changed its name to Malfa, Inc.

Knitting Mills

Berkshire Knitting Mills, Reading, Pa., recently opened a branch plant at Andrews, N. C. About 10,000 doz. pairs of hose will be produced at this plant per week. All hosiery will be sent to Reading to be finished.

Brown Bros. Hosiery Mills, Inc., Hickory, N. C., has purchased a building in Glen Alpine, N. C., where it will manufacture men's hosiery. The company will be known as John Hosiery Mills, Inc.

Cinderella Knitting Mills, Denver, Pa., is building a $75,000 addition to its main plant. The expansion will add 40,000 sq. ft. to the knitting, cutting, and sewing departments.

Claussner Hosiery Co., Paducah, Ky., has merged with Propper-McCallum Hosiery Co., Northampton, Mass., by means of a stock transfer. The latter company will operate as the Propper-McCallum Div. of Claussner. Revell McCallum, president of Propper-McCallum, will be vice president of the combined companies.

Eagle Knitting Mills, Inc., Milwaukee, Wis., has let a contract to Siesel Construction Co., Milwaukee, for a four-story addition to its mill.

J. T. Flagg Knitting Co., Florence, Ala., will install a $250,000 unit for dyeing, bleaching, and finishing knit fabrics.

Fleetwood Hosiers, Reading, Pa., will erect a 27x100-ft. addition costing $12,000 exclusive of equipment. Earl Sheib is the contractor.

Globe Knitting Works, Grand Rapids, Mich., has changed its corporate name to Modern Globe, Inc.

Greenville F.-F. Hosiery Mills, Inc., Greenville, N. C., has been chartered to manufacture hosiery. This new corporation is part of the reorganization of the Greenville Full-Fashioned Hosiery Mills managed by Felix Scheller.

Julius Kayser & Co. Ltd., Sherbrooke, Que., is completing arrangements for an appropriation of $450,000 for a modern hosiery, tricot, and throwing plant in Canada. This sum is in addition to a million-dollar expansion program now under way. The company has installed 24 new tricot machines in its Fairview Mill, Fountain Inn, S. C., as part of a $400,000 machinery modernization program.

Larldon Hosiery Mills, Greenville, Mich., has arranged for an RFC loan of $19,000, to be used for working capital.

Lebanon Knitting Mill, Pawtucket, R. I., will build a one-story addition that will cost about $20,000. The construction contract has been let to J. L. Marshall & Sons, Inc., Pawtucket.

Model Knitting Mills, Toronto, Ont., is erecting a new two-story mill 115x34 ft. The cost is estimated to be $30,000.

E. E. Paquette & Sons Ltd., Woodstock, Ont., has started a 10-yr. modernization program that will provide for new machinery to replace all present equipment.

Phil-Cord Mill, Monroe, N. C., has completed a $500,000 modernization, including a new building and new machinery. The company manufactures full-fashioned hosiery of 60-gauge.

Schletter Full-Fashioned Silk Hosiery Co., Inc., Palmyra, N. J., has changed its name to Vetterman Hosiery Mills, Inc.

Sheer Silk Hosiery Mills, Ltd., Sherbrooke, Que., will soon transfer its full-fashioned knitting operations to its new location in Sussex, N. B. It will retain finishing operations at its present site in Sherbrooke.

News About **MILLS** (Continued)

Skyland Textile Co., Morgantown, N. C., has purchased a site in West Jefferson, N. C. Ashe Industrial Enterprises, Inc., will erect the building that will be finished late this year. Skyland will also lease a new building now under construction in Forest City, N. C., for its half-hose finishing plant. The total investment is reported to be approximately $250,000.

Spencer Mfg. Co., Spencer, W. Va., has asked the owner of its plant to build a $100,000 addition. The building is owned by Spencer Development Co. The space will be used by the Spencer Manufacturing Co. for increased production of sweaters.

Strutwear, Inc., Minneapolis, Minn., plans to install four 30-section full-fashioned hosiery machines.

Utica Knitting Co., Utica, N. Y., stockholders have approved the proposed merger with the J. T. Flagg Knitting Co., Inc., Florence, Ala. The new company will be known as the Flagg-Utica Corp.

Vanity Fair Silk Mills, Reading, Pa., will install new partitions and flooring at an estimated cost of $30,000.

Vaughan Knitting Co., Pottstown, Pa., has leased a building from Bakersville Improvement Corp., Bakersville, N. C.

Vestal Mills, Athens, Tenn., has purchased additional machines to increase its men's wrap-stitch-hosiery production.

Walridge Knitting Mill, Charlotte, N. C., is installing package dyeing equipment sold by Morris Speizman Co.

Dyeing and Finishing Plants

Assonet Finishing Co., Assonet, Mass., has been purchased by Halu Fabrics, Inc., New York converters. The printing capacity of the plant will be increased from three roller printing machines to five and will handle both cotton and rayon goods.

Attleboro Dyeing & Finishing Corp. is erecting a new two-story addition of 21,000 sq. ft. to house a finishing and curing unit. Further major machinery purchases are to be made in the future.

Cabin Crafts, Inc., is constructing a new building that will be equipped with dyeing and finishing equipment. The company plans to construct a five-story building early next year.

Commission Dyers Ltd., Montreal, Que., a subsidiary of Alba Threads Ltd., recently began operations as a commission dyer of all types of yarns in skeins or on packages. The plant occupies 8,000 sq. ft. In addition to other equipment, the plant contains Foster winders, Universal coners, Universal tubers, skein reelers, skein-to-bobbin winders, and a well-equipped laboratory.

Julius Kayser & Co., New York, N. Y., has started operations in its new full-fashioned finishing plant, Liberty, S. C.

Lanett Bleachery & Dye Works, Lanett, Ala., is nearing completion of its $800,000 modernization program. The new 40,000-sq.-ft. addition will enable Lanett to coordinate certain activities and reduce costs.

Lowell Bleachery South, Griffin, Ga., will improve facilities for the disposition of dye and bleachery waste in order to prevent steam pollution. A new collection basin is to be constructed and related equipment will be installed.

Nylex Processing Co., Paterson, N. J., was recently incorporated to do general dyeing, finishing, and processing of silks, cottons, and other fabrics.

Queen Dyeing Div. of U. S. Finishing Co., Providence, R. I., may be sold to Comfy Mfg. Co., a Baltimore drapery manufacturer, if current negotiations are concluded.

William Whitman & Co., Inc., Lawrence, Mass., recently called a stockholders' meeting to change its corporate name to the Carolet Corp. This corporation will handle the finishing units recently purchased from Aspinook Corp.

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News About MILLS (Continued)

Miscellaneous

Anderson Flax Products Ltd. plant at Lucknow, Ont., was completely destroyed by fire recently with the loss estimated at $150,000. The plant was covered by insurance and will be rebuilt. It is under the management of Virdin Mowbray.

British Ropes Canada Factory Ltd., Grandview Highway, Vancouver, B. C., will erect a modern one-story steel-and-concrete plant addition at an estimated over-all cost of $1,500,000. It will be 150x360 ft., of the latest-type construction. Architects are McCarter & Nairne, Vancouver, B. C.

Emilian Bobkowicz Ltd., Montreal, Que., has purchased the building formerly occupied by Royal Metal Mfg. Co. Ltd., Preston, Ont., to produce burlap and jute-like materials. Machinery is being installed for the processing and weaving of jute, kenaf, and other similar jute-like bastfibers. Operations are expected to begin when the new installation is completed in the spring.

International Harvester Co., Fiber & Twine Div., Chicago, Ill., is moving machinery and equipment from its local plant to its new mill at New Orleans, La.

North American Lace Co., Philadelphia, Pa., has let a contract for a $41,000 addition to its manufacturing building to Jack Steel Construction Co., Philadelphia.

Foreign Mills

Caribbean International Mfg. Co., San Juan, Puerto Rico, has been organized by G. J. Weiger, S. Milgron, and J. Okean to manufacture textiles and print cloth.

Dawood Cotton Textile Mills Ltd., Landhi, Pakistan, is now in operation with 25,000 spinning spindles, 600 spinning spindles for waste, and 5,600 twisting and doubling spindles. By 1955 the company plans to expand to 100,000 spinning spindles, 1,000 looms, and a bleaching, dyeing, and finishing plant.

Industrial Co., Inc., Binalbagan, Occidental Negros, Philippines, has completed a new $750,000 mill to manufacture burlap and jute bags. The mill is equipped with machinery made in Scotland.

Lhasa, Tibet—Reports state that Chinese interests are setting up a woolen mill in Lhasa to manufacture Tibetan wool formerly sold to India.

Innes, Henderson & Co., Hawick, Scotland, will operate under the name of Braemar Knitwear Ltd. "Braemar" has been the brand trade mark of the company for quite some time, and the change of title will more closely identify it with its products.

Japan Fiber Industry Co., Yokohama, Japan, is reported to be negotiating with the Chinese Nationalist Government for the establishment of a ramie and hemp spinning and weaving plant near Taipei, Formosa. The company is also planning to establish a similar plant somewhere in Indonesia.

Societe Misr. pour La Rayonne, Kafr El Dawar, Egypt, has let a contract to Oscar Kohorn & Co. Ltd., New York, N. Y., for engineering service and equipment that is needed for the expansion of its mill.

Toyo Rayon Co., Atsu, Japan, will install machinery to produce approximately 3,000,000 lb. of rayon tire yarn and 50,000 lb. of continuous rayon tow annually.

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NEWS ABOUT *Men*

J. H. Alexander has resigned as head of the quality-control department of the Kershaw branch of Springs Cotton Mills, Kershaw, S. C., and has accepted a position with Abney Mills, Greenwood, S. C. **Mitchell Clark**, formerly with Springs Mills, Lancaster, S. C., succeeds Mr. Alexander.

John H. Anderson has been promoted from general superintendent to resident manager of Ounegan Mills of American Woolen Co., Old Town, Me.

Edward T. Armstrong has been appointed works manager of Toscony Fabrics, Inc., Passaic, N. J., and Pawtucket, R. I. Mr. Armstrong was formerly research director of engineering physics at Batelle Memorial Institute, Columbus, Ohio.

GEORGE WESTCOTT LITTLE has been appointed resident manager of the Hartsville, S. C., plant of United States Finishing Co.

W. F. Bird has been elected executive vice president of Collins & Aikman Corp., New York, N. Y. Other appointments include: **P. H. Chance**, vice president of manufacturing; **Robert W. McCullough**, director of manufacturing; **Lawrence C. Knowles**, director of production control; **Joseph S. Kelly**, general traffic manager; **Donald F. McCullough**, assistant director of merchandising; and **Charles L. Conley** in charge of the new staff department in the sales division.

Ferdinand Bray has resigned as vice president and general manager of Holyoke Fabrics, Inc., Chicopee, Mass., to form his own business.

Noel Breault has become assistant superintendent at the Walsh Mill of Ames Worsted Co., Lowell, Mass.

Edward P. Brooks, dean of the School of Industrial Management, Massachusetts Institute of Technology, Cambridge, Mass., has been elected a director of Plymouth Cordage Co., Plymouth, Mass.

Paul Bonsaint has become cloth-room overseer at Greenhalgh Mills, Pawtucket, R. I.

Edward E. Burdett has been named general superintendent of the Atlantic Mills Div. of A. D. Juilliard & Co., Inc., Providence, R. I. He succeeds **Jordan M. Wenberg.**

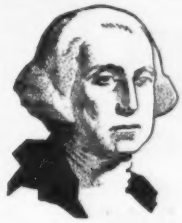
George H. Carr has been elected president of Julius Kayser & Co. Ltd., Sherbrooke, Que., succeeding **Theophile Mueller**, who has become chairman of the board. **Donald Dobson** has been named vice president in charge of sales; **H. S. Petersen**, vice president in charge of manufacturing; **Joseph Kenna**, secretary and treasurer.

John V. Damon, Salem, N. H., has succeeded **Francis J. Rodericks** as manager of personnel relations and the production engineering departments at the Shawsheen Mills of American Woolen Co., Andover, Mass.

L. J. Denico has become overseer of carding at Dorr Woolen Co., Newport Guild, N. H.

George T. English has become superintendent of finishing at Richmond Piece Dye Works, Inc., Richmond, Va.

Joseph Etchells has become overseer of finishing at the Raleigh Mills of American Woolen Co., Raleigh, N. C.



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News About MEN

(Continued)

Roger Feury has become overseer of dyeing at Dyecraftsmen, Inc., Hingham, Mass.

Thomas G. Fioentino has become overseer of spinning at Wyandotte Worsted Co., Pittsfield, Mass.

Charles W. Frank has been appointed manager of general purchasing, warehousing, and traffic for American Woolen Co., New York, N. Y. Mr. Frank was recently appointed to the position of purchasing agent to succeed **Percy E. Wardwell**, retired.

James L. Frank has retired as head of the engineering department of Burlington Mills Corp., Greensboro, N. C.

John L. Getchell has retired as overseer of spinning at the Anderson Mills of American Woolen Co., Skowhegan, Me.

Clovis J. Gignac has become superintendent of the woolen division of Botany Mills, Inc., Passaic, N. J.

Ethan A. Goodnow has become plant manager at Raycrest Mills, Inc., Pawtucket, R. I. **Charles A. Jarvis** has been named treasurer.

Arthur Gould has been named product manager of the Laurx Metallic Yarn Div. of The Dobeckmun Co., Cleveland, Ohio.

F. E. Grimshaw has been elected secretary of the Verney Corp. of Canada, Montreal, Que. Other appointments include **C. R. Simek**, supervisor of mills; **P. S. Dolly**, manager of the St. Hyacinthe division; **W. L. Blanchet**, manager of the Granby division.

Paul E. Hackett has been placed in charge of the New York office of the Darlene Textile Div. of M. K. M. Knitting Mills, Manchester, N. H.

Laurence N. Hale has been elected president of Paul Whitin Mfg. Co., Northbridge, Mass., succeeding **Paul Whitin**, who is now chairman of the board. Mr. Whitin succeeds **E. Kent Swift**, who remains a member of the board. Other changes are: **Harry T. Whitin**, elected executive vice president; **Richard C. Whitin, Jr.**, appointed comptroller in addition to his duties as clerk; **Eugene P. Strout**, named assistant comptroller.

G. Hamilton has resigned as overseer of dyeing at the Bell Co., Worcester, Mass.

John R. Hawkins has been promoted to assistant section superintendent of inspection and **J. Wesley Hornaday** has been promoted to general overseer of weaving at Dan River Mills, Inc., Danville, Va.

Charles S. Henerey has been elected president and treasurer of Bamberg Textile Mills, Bamberg, S. C.

Robert E. Heyn has been elected vice president in charge

WILLFRED W. LUFKIN, JR., (left) has been elected president and chief executive officer of Wellington Sears Co., Inc., New York, N. Y., succeeding RICHARD C. CONANT (right). Mr. Conant has been named chairman of the board.

News About **MEN** (Continued)

of sales at Modern Globe, Inc., Grand Rapids, Mich.

W. G. Hicks has retired as president and general manager of Belding-Corticelli Ltd., Montreal, Que. He will continue as a member of the board. **W. P. MacDougall,** board chairman, will act as president. **L. B. Ramsey,** has been named general manager and will continue as treasurer.

Arthur Hoyle has become overseer of spinning at Raylaine Worsteds, Inc., Manchester, N. H., succeeding **Harry Ray, Jr.**

Charles F. H. Johnson, Jr., has been named chairman of the board of Botany Mills, Inc., Passaic, N. J., succeeding **Max W. Stoehr,** resigned. **George W. Shaddock,** secretary-treasurer, has been named president to succeed Mr. Johnson. **William Graessle,** assistant to the president, has been made a vice president and director.

Alfred D. Kennedy has been elected to the board of Thomaston Mills, Thomaston, Ga., to succeed the late **Robert E. Hightower.**

James King has resigned as quality-control officer at Merrimack Mfg. Co., Lowell, Mass.

James Knowles, Jr., has been named superintendent of the new Kilburn Mill, Tryon, N. C.

William R. Landa has been named export manager for both gray and finished goods in all departments of Bates Fabrics, Inc., Lewiston, Me.

Harold L. LaTour has been named superintendent of preparation and weaving at the Paul Whitin Mfg. Co. Rockdale Mill, Northbridge, Mass. **John Thibeault** has been named overseer of weaving.

Russell Lawson has resigned as designer at Goodall-Sanford Mills, Sanford, Me.

Edwin G. Loewy and **Sanford S. Agate,** both directors and vice presidents of Cohn, Hall, Marx Co., New York, N. Y, have been named vice presidents of the parent company, United Merchants & Mfrs., Inc., New York, N. Y.

LESTER DAVIS has been named superintendent and manager of production of the Munsingwear Women's Hosiery Div., Des Moines, Iowa.

L. P. Lumb has resigned as superintendent and designer at Saskatchewan Wool Products, Moose Jaw, Sask.

Andrew W. Macy has been named resident manager of the Nashawena Div. of William Whitman Co., New Bedford, Mass.

B. J. Mallard has resigned as assistant overseer of carding at Springs Cotton Mills, Chester, S. C., to accept a position with Highland Cotton Mills, Inc., High Point, N. C.

George V. P. Marks has resigned as vice president in charge of purchasing raw materials and fabric sales for Julius Kayser & Co., Inc., New York.

David J. McKee has been elected treasurer of the American Textile Co., Pawtucket, R. I. He was formerly assistant treasurer.

George McQuilkin has been appointed controller of the Bauer & Black division of the Kendall Co., Walpole, Mass.

James Montgomery has resigned as superintendent of Canadian Cottons Ltd., Milltown, N. B., Canada.

Russell B. Newton has resigned as president and a member of the board of Dan River Mills, Danville, Va. **Basil D. Browder,** vice president in charge of manufacturing, was named executive vice president,

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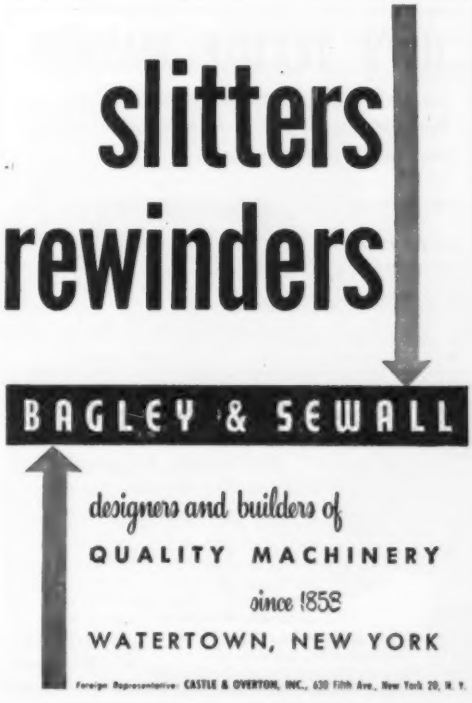

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Superior STEAM GENERATION

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For use on rayon, cotton and woolen material.
Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

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First Choice of the Textile Industry!

Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

News About **MEN** (Continued)

a newly created position. **Frank Talbott, Jr.**, corporation counsel, has been elected chairman of the board.

P. W. Nipper has been named superintendent at the Jonesville Mills, of J. P. Stevens & Co., Inc., Jonesville, S. C., succeeding **Frank W. Walsh**, who has been named superintendent at the Utica-Mohawk Cotton Mill Div.

J. J. Nixon has resigned as overseer of weaving at the Baltic Mills of American Woolen Co., Inc., Enfield, N. H., **Graham A. Griffin** has succeeded him.

Hinton Pierce has been appointed superintendent of Burlington Mills Hosiery Finishing Plant, Greensboro, N. C., succeeding **E. O. Pirkle.**

George O. Porter has been named superintendent of carding, spinning, and weaving, a new post, at Mooresville Mills, Mooresville, N. C. Mr. Porter served as assistant general superintendent of Borden Mills, Kingsport, Tenn., before accepting his new position.

W. H. Rhodes has resigned as superintendent of Guild Northland Mills, Laconia, N. H.

Lester J. Robinson has retired as administrative consultant to Lockport Felt Co., Lockport, N. Y.

Francis J. Rodericks has resigned as head of personnel relations and the production engineering department at the Shawsheen Mill of American Woolen Co., Andover, Mass.

James F. Saunders has been named overseer of spinning at Chauvin Spinning Co., Woonsocket, R. I.

E. P. Schremp has resigned as overseer of weaving at the Drakes Mill of Pacific Mills, Drakes Branch, Va.

Ernest Sewell has resigned as technical director of the Magog Print Works of Dominion Textile Co. Ltd., Montreal, Que.

Dennis Shea, general manager of Vanta Corp., Waltham, Mass., has been named vice president of the company's Montezuma Mill in Montezuma, Ga.

Paul Sherman has been named yarn superintendent at Wyandotte Worsted Co., Pittsfield, Mass., succeeding **W. Gallagher**, who has resigned.

A. Shook has resigned as superintendent at the Horn Bros. Woolen Co. Ltd., mill in Lindsay, Ont.

A. G. Tibbites, formerly manager of Consumers Cordage Co. Ltd., has been appointed superintendent of Plymouth Cordage Co. Ltd., Welland, Ont.

Henry A. Truslow has resigned as assistant manager of the Fall River Div., Pepperell Mfg. Co., Fall River, Mass., to become manager of the Ponemah Mills, Taftville, Conn. **Ernest Morris**, production

MRS. DOROTHY LIEBES (left) and E. HOWARD BENNETT have been elected to the board of United States Finishing Co., Norwich, Conn.

News About **MEN** (Continued)

superintendent, has been appointed division superintendent and will take over Mr. Truslow's duties.

Joseph M. Tyler, maintenance and power superintendent of Jame. Lees & Sons, Bridgeport, Pa., has been put in charge of the mechanical, electrical, and power departments following their consolidation. **George B. Burpee,** project engineer, has been appointed maintenance superintendent to succeed the late **Charles N. Kuknle.**

C. I. West has resigned as assistant overseer of the card room of the Eureka plant of Springs Cotton Mills, Chester, S. C. He has accepted a position as superintendent of all carding in the Riverside Division of Dan River Mills, Danville, Va.

Fred R. Westcott has been elected chairman of the board of Cabin Crafts, Inc., Dalton, Ga. **Robert G. McCamy** has been elected president of the company.

H. D. Whitener has been elected vice president of Rex Mills, Inc., Gastonia, N. C.

E. R. Zane has been elected a member of the board of Burlington Mills Corp., Greensboro, N. C. **W. E. Greer, Jr.,** has been named executive vice president.

OBITUARY

Erskine E. Boyce, 57, developer of the Boyce Weaver's Knotter.

D. F. Burns, general superintendent of Durham Hosiery Mills, Plant No. 6, Durham, N. C.

Simeon R. Cross, 45, president of Cross Cotton Mills, Marion, N. C.

Samuel K. Delp, superintendent of the Asheboro, N. C., plant of Textile Machine Works.

William H. Dunn, 69, retired treasurer and director of Raybestos-Manhattan, Inc., Passaic, N. J.

Dr. Gustavus J. Esselen, 64, vice president and director of the Esselen research division of United States Testing Co., Boston, Mass.

Fred H. Haggerson, 68, chairman of the board of Union Carbide & Carbon Corp., New York, N. Y.

Peter Hardman, 85, former superintendent of manufacturing for the American Thread Co., Willimantic, Conn.

William L. Howe, 65, superintendent of the Leaksville Woolen Mill, Leaksville, N. C.

Joseph Lauerman, 43, president of Marinette Knitting Mills, Marinette, Wis.

Ralph L. Marble, 53, general superintendent of Curtis & Marble Machine Co., Worcester, Mass.

Christopher P. Russell, 78, retired overseer of spinning at the Washington Mills of American Woolen Co., Lawrence, Mass.

Harry Searles, 69, director of research at Van Raalte Co., Inc., New York, N. Y.

George D. Simpkins, departmental overseer of Mills Mill No. 2, Woodruff, S. C.

Donald V. Smith, 57, president of Zephyr Mills, Inc., Coopersburg, Pa.

Theodore C. Taylor, 102, chairman and managing director of J. T. & T. Taylor Ltd., Batley, England.

Earl F. Tulloch, 58, vice president and treasurer of Washington Mills Co., Mayodan, N. C.

William J. Vereen, 67, president of Moultrie Cotton Mills and Riverside Mfg. Co., Moultrie, Ga.

Because FLEXLOC Self-Locking Nuts are one piece, all metal, they save in assembly, purchasing and stocking as compared with lock washers. Because FLEXLOC Nuts are both stop and lock nuts, they *lock* and *stay locked* in any position on a threaded member. Samples available upon request. Just let us know the size you need. STANDARD PRESSED STEEL CO., Jenkintown 35, Pennsylvania.

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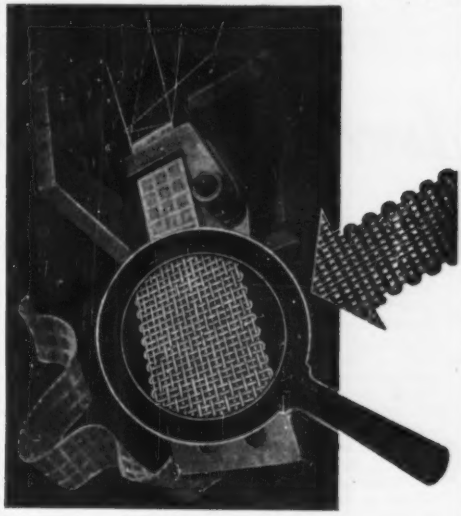

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TEXNOVO S.P.A. ITALY

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Americans Are Rolling Up Their Sleeves!

YES, ALL KINDS OF PEOPLE ARE GIVING BLOOD SO THAT OUR WOUNDED MAY LIVE!

● Today, the blood of a Boston bookkeeper may be flowing through the veins of a wounded kid from a Kansas farm . . . the blood of a pretty Southern housewife may have saved the life of a grizzled leatherneck. For, blood is blood, a God-given miracle for which there is no substitute . . . and when a man's life hangs in the balance and blood is needed, there is nothing else to take its place!

Right now the need for blood is urgent. In hospitals —at home and overseas— many men require four and six transfusions during delicate operations. And the blood *must be there*—when it's needed. So give the most precious gift of all—*your* blood!

Be assured that giving blood is neither difficult nor distressing. And what a thrill there is in knowing that you've performed a really unselfish act! So call your local American Red Cross today and make an appointment. And tell your friends and neighbors about your experience. Let them share the wonderful feeling Americans get when they roll up their sleeves—and give blood.

But—

WHAT HAPPENED TO THAT PINT OF BLOOD YOU WERE GOING TO GIVE?

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NEW ADVERTISEMENTS address N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. January issue closing December 16th.

MEN WANTED
POSITIONS OPEN

We can place: MANAGER wstd. combing plant; Mgr. shirt mfg.; woolen yarn supts. (2); wstd. mill supt. complete plant, seour., card., comb., draw., spin., wind. and twist.; mgrs. and supts. elastic and non-elastic nar. and broad loom fabrics; woolen supts., one for men's wear and one for women's wear; shoddy supt.; tricot dye. and fin.; asst. supts. woolen and worsted yarn and cloth mills; asst. supt. wstd. comb.; designers fancy woolen and fancy worsted men's wear and dress goods; designer for elastic and non-elastic nar. fabrics.

OVERSEERS FOLLOWING DEPTS.: testing and quality control; Axminster carpet setting; cot., rayon, woolen, worsted and plush weaving; pile fab. dyeing; garnetting; woolen weav. automatic looms; dyeing cot. and rayon piece goods for U. S. and foreign countries; worsted, card. and comb.; woolen card.; weav. nar. fabrics; jig dye.; worsted draw. and spin.; rag picking; cot. card. and spin. for U. S. and So. Am.; pick., card. and spin. synthetic fibers; dyeing tricot fabrics; woolen and wstd. finish.; bleaching raw cotton and cot. piece goods; dressing, fancy wstds.; screen printing.

SECOND HANDS FOLLOWING DEPTS.: top dyeing; nap. and jig.; wstd. spin.; woolen wet finish.; woolen dye.; cot. twist. and wind.

MASTER MECHANICS, plant engineers and asst. plant engineers; machine shop foreman; chemists, chem. engineers and laboratory men; chem. and dyestuffs salesmen; tex. school graduate to learn garment dye.; carpet loom fixers; woolen mule fixers; woolen card fixers; plush designer; gurnet fixer; plush loom fixers; Tompkins mach. fixer; loom fixer and weaving instructor; fixer-foreman for Whitin twisters.

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CLIENTS, kindly supply detailed requirements, salary range, etc.

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Chickering 4-2944

Applications are invited by the Pakistan Industrial Development Corporation for the following posts in the Woollen Mills under construction in Bannu and Baluchistan (West Pakistan)— Manager, Works Engineer, Raw Wool purchaser, Weaving and Designing Supervisor, Finishing and Dyeing Supervisor, Assistant Spinning and Carding Supervisor, Assistant Dyeing and Weaving Supervisor, Assistant Finishing and Dyeing Supervisor, Salesmen, Assistant Electrical and Mechanical Engineer (Foreman type).

Appointment against these posts will be on probation for six months and is likely to be placed on contract basis for a period of three years. The broad terms of the contract will be: (a) One month's leave for every completed year of service. (b) Accommodation as available at Mill site when the construction is complete and other facilities as may be admissible under the rules and regulations to be formulated by the Pakistan Industrial Development Corporation or the Company promoted for this Woollen Mill. (c) Three month's notice by either side for termination of the contract.

Applications for the above posts stating salary acceptable, age, academic qualifications, particular of previous employment and experience should reach the First Secretary, Embassy of Pakistan, 2201 R Street, N. W., Washington, D. C., as soon as possible.

WANTED—ASSISTANT SUPERINTENDENT

For medium-sized Noble Wool Combing Plant located in New England. Must have administrative ability, thorough knowledge of scouring, carding and combing operations and quality control, also experience in Labor Relations. Young man would be preferable but not essential.

Telephone or write in confidence to
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CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

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(Additional Position Vacant Advertising on the following page)

WANTED—TRICOT fixer foreman for new plant with all new equipment and air conditioned. Nearby New York. Person must be wanting a permanent connection. P-6021, Textile World.

YOUNG TEXTILE School Graduate wanted for production duties in modern Pennsylvania weaving plant. While experience desired condition for employment is ability and ambition. P-6059, Textile World.

FIRST CLASS DYER WANTED

Must have proper educational training in chemistry and successful background in dyeing synthetic fabrics with excellent matching ability. Good executive type capable taking full charge dyeing department with successful concern located in Southern area. Reply should be detailed and will be held in strict confidence.

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TEXTILE MEN

An active, confidential service! Interview at your convenience. Your application held in strict confidence.

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POSITIONS WANTED

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MILL MANAGER available in January. Twenty-five years producing wide variety plain & fancy fabrics using natural & synthetic yarns. Designer of Shaft or Jacquard fabrics. Expert practical man on Drapers, box looms, and Jacquards. Good teacher and handler of help. Thorough in all auxiliary operations, costs, quality control, incentives, etc. A quality producer who gets results. South preferred. PW-5902, Textile World.

SUPERINTENDENT OF Weaving, with 15 years experience as Supervisor in one of the largest woolen and worsted companies, desires position as Superintendent or Overseer of Weaving. Has had charge of Dressing, Weaving and Mending, and has Textile School and Loomfixing background. Thoroughly experienced in manufacturing plain, fancy and piece-dyed fabrics. Has good record in handling help, both union and non-union in northern and southern mills. Textile experience and references furnished. PW-6042, Textile World.

(Continued on the following page)

WANTED—NARROW FABRIC MEN

A well established successful New England mill has openings for two men—designer for sample work days and night overseer for weaving. Preference will be given to men who are familiar with elastic as well as non-elastic fabrics. Steady employment. Telephone or write in confidence to:

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For work in the broad field of development of new yarn and fabric structures, utilization of new fibers, and related problems.

Requires preferably advanced degree in Engineering or Physics with at least four to five years experience in Textile Research. Excellent opportunity for aggressive and capable qualified person.

Liberal benefits and pleasant working conditions. Please give resume of personal background, education and experience, with salary requirements, in first letter.

Celanese Corporation of America
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WANTED

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Long established manufacturer of textile machinery has an opening for an experienced man who is interested in technical sales and product development of textile finishing machinery. This position requires the following type of man.

Education: Textile school graduate in chemistry and dyeing.

Experience: 5 years in modern cotton finishing plant; for example, experience in operating pad-steam, bleaching ranges, etc. 5 years experience in technical service for dyestuff manufacturer.

Strict confidence given application.

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POSITIONS WANTED
(Continued from preceding page)

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THROWSTER WIDE experience throwing rayon, silk & nylon yarn for the dress goods, hosiery, ribbon, knitting & underwear trade. Highly trained in quality-production-cost control. Competent in personnel & training. Desires position to manage throwing operations or as technician for large concern. PW-6075, Textile World.

TRICOT MECHANIC, any type high speed or old type Tricot machines many years experience as foreman. Wishes a change. PW-6037, Textile World.

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Frenchman, textile engineer, disposing of capital, numerous industrial connections would exploit in Europe patent actually on U. S. market or would represent American firm. Write Box 289, Havas Lille (France).

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1—60" JAMES HUNTER 5 CYLINDER GARNETT.

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9—WARNER & SWASEY TEXTILE PIN DRAFTER MACHINES. 2 head machines. using 15" Dia. Roving Cans. Complete with oil pumps. etc. 1947 Model.

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COMPLETE FRENCH WORSTED SPINNING UNIT
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OPAL PROCESSING COMPANY

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2—Textile Vat Agers, 30' long x 50"
4—Copper Jacketed Mixing Kettles, 50 gal., motor driven, tilting type
2—Open Width Greige Washers, 3 compts., 3 sets nip rolls, 50" & 60".
1—Premier Colloid Mill, U4, 20 hp.
2—Eppenbach Homo Mixers, 1 hp.
1—Open Print Washer, 3 compts.
1—V.V. Net Dryer, 30' x 55".
4—Van Vlaanderan Tenter Frames, 60' x 54", 50' x 60", 50' x 50", and 40' x 60", enclosed gears and Reeves.
1—V.V. Print Padder, 3 rolls, 50" wide.
1—Suction Extractor, 60" wide, L5 Nash Hytor Pump & 25 hp motor.
4—Van Vlaanderan Tenter Frames, 60' x 60", 50' x 60", 50' x 50", 40' x 60", enclosed gears and Reeves.
1—Morrison Jacketed Palmer Quetsch Unit, 68" x 60", with drive.
1—Leyland Scutcher, 50", w/motor.
2—Nat'l Loop Dryers, 45' long x 89" wide, revolving sticks
1—V.V. Decatizer, 54" wide, w/blanket.
4—Inspection Tables, 50" wide.
12—Wooden Dye Becks, 1-20', 1-13, 1-12', 5-8', 2-6', 2-4' wide.
2—V.V. Silk Calenders, 3 rolls, 50" wide
23—Textile Copper Dry Cans, 60" x 23" dia. Reeves drive and motor.
1—E & H Flat Folder, 50" wide.
4—V.V. Tubers, 60" wide w/motors.
1—Stainless Steel Rope Washer, 54' long x 14' wide, 58 sections, 30" deep, high speed, 1948.

REPUBLIC TEXTILE EQUIPMENT CO.
40 WORTH STREET NEW YORK CITY
Buyers and Sellers of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

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220M—8-¾" Quills

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WILSON LEWITH MACHINERY CORP.

Post Office Box 8097 CHARLOTTE, N. C. *Phone 6-6411* Warehouse Wilkinson Blvd. Behind Barbeque Lodge

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30—Tinned steel dry cans 23" dia x 120" face bucket type gear driven friction bearings upright or horizontal frames.
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15—Copper dry cans 23" dia x 100" face steel heads gear driven.
5—7' slashers 58" face bucket type.
5—6' slashers 58" face bucket type.
2—6' slashers 38" face bucket type.

We can supply one dry can or as many as your needs may be. We fabricate new copper or stainless steel dry cans any width. Dry can machines built to your specifications.

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Used Automatic
LOOM BOBBINS
Good Condition
FS-5825, Textile World
330 W. 42 St., New York 36, N. Y.

Loom Leathers

(Continued from page 105)

This check should be made each time the loomfixer inspects the cloth.

Harness straps wear at two places on this motion: at the compensating-sheave pin and at the hook holes. Bolts can be used in place of hooks to connect the compensating-sheave strap to the two harness-sheave straps. Since the bolts eliminate abrasion, straps connected this way will last several times longer than straps that use regular hooks.

The bolt-fastened straps can also be used on Brown-spring top-harness motions with good results. Another improvement over conventional straps on the Brown motion can be made if the loop strap between the springs and the compensating sheaves is altered.

Ordinarily, a 2-in. loop is formed in the strap by riveting one end of the strap. These rivets soon break loose, and the strap is ruined.

An excellent strap can be made at low cost if the strap is made from a piece of strapping exactly twice the length of the desired finished strap. The holes for the spring hook are punched in the center. The ends are punched, and a grommet is placed through both ends to hold them together. The machine screw in the compensating sheave holds both ends of the strap to the sheave. Since there is no break in the length of the loop strap, its life is multiplied.

On all types of cam-driven harness motions, the harness strapping will last longer if the treadles, treadle rolls, and cams are kept in good repair and kept lubricated.

Worn or frozen harness sheaves will result in broken strapping at the point where the strapping contacts the sheaves. Replace the sheaves and sheave shafts when they become worn, and loosen up frozen sheaves as soon as they are found. Inspect the sheaves daily at the same time that harness strapping is inspected.

Jack straps commonly tear out at the buckle before they wear out at the jack stick. On heavy weaves, jack straps will last longer if they are made long enough to double through the jack stick and the treadle stirrup.

For a long-range, low-maintenance-cost program for harness strapping on looms that weave lightweight and medium-weight fabrics, the clock-spring top should be used.

Make Your Pickers Last

Pickers today are much better than they were a few years ago; so they're often neglected. If looms are set to

(Continued on page 290)

10 ATWOOD UTILITY 12-14 OZ. DOUBLE DECK TWISTERS 240 Spindles EACH 2 Motors . . . . .

50 ATWOOD 8 oz. UTILITY DOUBLE DECK **TWISTERS** 172 200 Spindles

8 FLETCHER 15'8" LOOMS Individually Motorized Cam Motion

4 Roll CALENDAR 18" Face, Gas Heated 2 Steel, 2 Paper Rolls

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1948 Model—Motorized.

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1—V.V. 54" Silk Embosser, 2 Rolls.
1—Butterworth 90'x60" Tenter, S.S. Clips, Motor.
10—72" x 23" S.S. Dry Cans, Ball Bearing.
2—Finishing Calenders, 50"-60", Ball Bearing Rolls.

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2—18" x 18" P. & S. Ceiling Condensers
1—"Parkhurst" 48" Burr Picker with Feed
1—Sargent 36" Duplex Burr Picker
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2—L. & G. Chenille Cutters

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1—Foster, Mod. 101 sp. Cone Winder
1—Foster Mod. 30 Skein to Cone Winder
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1—Whitin Quiller 2½" Gauge (long chain)
1—Lasenby 15 sp. Cop Winder
3—Sargent 16 sp. Balling Machine, 1948

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1—Hunter 26B Fulling Mill, 1949
1—Gessner 72"x36" Semi-Decater, 1943
1—Hunter Mod. G, Squeeze Rolls, 72"
2—Birch Bros. & Tack. Mach. (92")
1—Birch 72" Scutcher & Vacuum
1—Roy 86" Napper Grinder
1—P. & W., 66" 4 cyl. Brush & Sander
2—Texale Gig's, double cylinder (60")
1—Yorkshire Crab 72"—3 bowl
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6—Dry Cans Copper, 70" x 36"
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38—C & K C-4 72" Dobby Looms, Ind. M.D.
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2—D&F 80"x80" Iron Cards, Cond. M.D.
1—Set Infra Red Drying Ovens, Fans, Motors
1—Sargent Raw Stock Pit Feeder, Sq. Rolls.
1—K & W Stainless Steel Raw Stock Dyer.
2—Sheridan 9AH Hydrau. Embossing Presses.

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Tube + 3° 30' Cone Attachments, Anti-Wear Tensions, Motorized

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4-9/16"T x 3"H x 1⅛" Bbl.

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3⅛"T x 3H" x 1⅛ Bbl.

25,000 FIBRE HEAD SPOOLS—5¼"T x 4¾"H x 2¼" Bbl. } 100 SIZING TUBES

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(*Continued from page 288*)

make binders and checkstraps last, pickers will also last a long time. Several things add to the life of a picker:

1. Select the picker to fit your picker stick. If it's too small in the loop and has to be forced on the stick, the loop will break. If the loop is too large, the picker will slide up and down the stick, receive the shuttle spur in several places, and soon have to be replaced.

The picker must not be too large, or it will wear itself out against the box-top plate or the lay-end plate. If it's too small, it won't last long either.

2. Don't run too much picker-stick power.

3. Parallel the picker. If it's too low on the front, the loop will stretch. If it's too low or too high at the back, the head will be ruined.

4. Use a good picker stick to avoid boring into the edge of an old hole when you drill a screw hole in the picker and picker stick.

5. Loosen the parallel foot when you center the picker. Move the foot on the rocker shaft until the picker is positioned right. Don't cut the inside of the loop or the picker head to center the picker.

Stop Leather Wear on C&K Looms

Drop-box pickers are the greatest single-item cost on C&K looms; yet, fully half this expense is unnecessary. Pickers are made to last for a long time; and if they don't last, it's because they're carelessly put on the loom or because the loom is in poor mechanical condition.

To make drop-box pickers last:

1. Reduce the picker-stick power
2. Don't let the power stroke override the picker-rod bumper
3. Loosen the pressure on the binder
4. Run a "springy" picker-rod bumper
5. Use a good picker stick
6. Don't run too much heel spring
7. Run a bumper back of the picker (on old-type S looms, a flat leather washer will do)
8. Run a springy shuttle checkstrap
9. Run a long, gentle check on the picker stick.

Picker-rod bumpers on C&K looms are very expensive. Leather and synthetic-rubber tubing are both used successfully. Both should be just long enough to stop the picker within ¼ in. of the end of the picker-stick

(*Continued on page 292*)

FOR SALE

PARTIAL LIST---IMMEDIATE DELIVERY

DYEING AND FINISHING

1 Werner BOIL-OFF UNIT, 80", with Padder.
1 C&M BRUSH, 10 Roll, 108" M.D.
1 Van Vlaan, BUTTON BREAKER, 19 Brass Rolls, 50", M.D.
1 Set 17 DRY CANS, Copper, 114" x 23".
1 National LOOP DRYER, Revolving Stick, 90".
1 E.&H. FOLDER, 1 Yard, 52", Air Lift, M.D.
2 C&M CEILING FOLDERS, 90", Adj., M.D.
1 C&M INSPECTING UNIT, 96", F. & R. TREADLE, M.D.
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2 Gessner NAPPERS, D.A., 18 Roll, 78"-90" M.D.
1 D&F NAPPER, 24 Roll, 80" M.D.
1 D&F KNIT GOODS NAPPER, 20 Roll, 80".
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1 Voelker CLOTH PRESS, 66", Double Bed, M.D.
1 Werner PALMER, TENTER, QUETCH UNIT, 54".
1 T&H FLOCK STENCIL PRINTING UNIT, 45", M.D.
1 R.B.&F. PRINT MACHINE, 2 Color, Cylinder 64" Face.
1 Duncan PRINT MACHINE, 3 Color, Cylinder 61" face, Motor and Controls.
2 QUETCHES, 2 Roll, 63", 66", M.D.
1 BIRCH BCUTCHER, 90", Vacuum Slot, Nash Pump, Motors, etc.
1 Dinsmore SEWING MACHINE, Portable, Rotary Stand, Narrow, 60 D3S Head, M.D.
1 C&M SHEAR, Velvet Type, 80", Double Blade, M.D.
1 C&M Shear, Velvet Type, Single Blade, 66", M.D.
1 P&W SHEAR, 66½", Model A, M.D.
1 Johnson SLASHER, 5 Drum, 52", Size Box, Kettle, Agitator, M.D.
2 SQUEEZE SETS, 3 roll top and bottom S.S., Middle Rubber, 60".
2 SQUEEZE SETS, 2 Rubber Rolls, 18" x 18".

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1 New Butterworth 5 Can S.S. DRYER, 60".
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2 P&S '44-'48 DUSTERS, Model 550
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1 Pedlow '46 S.S. JIGG, 80", M.D.
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198 DRAPER '36 XK LOOMS, 42", M.D.
92 Draper '49 XD LOOMS, 54", M.D.
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80 C&K '36 B3 LOOMS, 54", M.D.
26 C&K '50 B6 LOOMS, 56", M.D.
90 C&K '49 C4 LOOMS, 72" M.D.
18 C&K '48 C4 LOOMS, 76" M.D.
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9 D&F '48 MULES, 360 Spdls. Ea., 2-1/8" Ga.
? Woonsocket '38 NAPPERS, D.B., 90", S.A. 20 Roll, M.D.
1 Butterworth '48 PADDER, 2 Rubber Rolls, 22" x 100" face.
1 Pair New RUBBER ROLLS, 96" x 12¼" Dia., 84 Density.
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2 D&F CEILING CONDENSERS, Wool Type, Single Drum.
2 D&F TAPE CONDENSERS, 60", Single Rubb, 96 Ends.
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4 H&B THREAD COVERING MACHINES, 80 Spdls., Model BD
1 Whitin Auto. PICKER FEED, 60", Model EL.
1 Hunter GARNETT, 3 Cyl. 38" x 60".
28 C&K LOOMS, 82", Auto. 4x1, M.D.
2 C&K LOOMS, 82", 4x1, M.D.
18 C&K LOOMS, 92", Auto. 4x1, M.D.
12 C&K LOOMS, W2, 92", Auto. 4x1, M.D.
12 Wilton CARPET LOOMS, ¾-4/4, with Jacquards.
2 D&F MIXING PICKERS, 6 Bar, 48".
1 D&F Iron FEARNAUGHT PICKER, 48" x 48".
2 P&S RAG PICKERS, B.B. Cyls., 20" x 30".
1 S-L ROVING FRAME, 152 Spdls., 6" x 4", D2-LD.
2 Whitin WOOL SPINNING FRAMES, 100 Spdls. Ea., 4" Ga., M.D.
10 Brownell TWISTERS, Flyer, Model M, 84 Spdls. Ea., 6" Ga.
1 B.C. TYING-IN Model K MACHINE.
2 Foster Model 101 CONE WINDERS, 100 Spdls. Ea., M.D.
2 D&F WARP REELS, Brass Plate, 82", Beamer, Compressor, Etc.

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20 W2 82" AUTOMATIC 4x1

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1 Ager 60" 48 rolls 20' long
1 48" self balancing Extractor
1 Set of 8—648" Copper Cans
1 New 80½" Beamer

1 80" wide Pin Tenter Frame 20'
1 Paterson Examiner, 72" wide
1 72" Park Woolson Decater
1 Set 18 Dry Cans 48" face; 5 stainless steel, 13 iron tinned with reeves
8 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
4 Three (3) Roll Padders 45"
30 50" Dry Cans
3 Johnson Slashers 7—5—3 Can 66"
1 Cocker Slasher 5 Can 57"
1 Set 17 Can Butterworth 132" S.S. B.B. Motor and Reeves Drive
1 72" Greige Washer with Squeeze Rolls 24' long
5 Atwood 5B Twisters
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8 Sipp Warpers and Winders
20 #90 Universals
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(Continued from page 290)

stroke. Too much stroke will break down the bumper quickly.

If leather is used, a type that has long life should be selected. Hair-on or chrome leathers are good for bumpers; oak-tanned leather is poor.

Heel straps and return-spring adjusting straps are small items that run to only small costs, but they can be made to last longer.

The old expansion springs should be replaced by the new compression-type springs that do not break. The adjustable spring stands can be set to give just the right amount of spring tension, which will make the heel and return straps last longer.

Lay-end bumpers that stop the picker stick at the power stroke and at the check stroke on the drive end of S-5 and S-6 looms are usually made with the plies of leather parallel to the width of the picker stick. Bumpers of this type wear rapidly and must be replaced often.

If the plies of leather in lay-end bumpers are reversed to make the plies flat against the narrow edge of the picker stick, the bumpers will last several times longer.

All the basic loom repairs and settings that are necessary to make loom leathers last longer require loomfixers' time and also require new loom parts, but the money saved on loom leathers will more than pay for the expenditures. In addition, better loom performance will result in a more efficient weave room.

LEGAL NOTICE

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION

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McGRAW-HILL PUBLISHING COMPANY, INC.
By J. A. GERARDI, Vice Pres. & Treas.

Sworn to and subscribed before me this 9th day of September, 1952.

[SEAL] ELVA G. MAHLIN
(My Commission expires March 30, 1954)

USED EQUIPMENT — AVAILABLE IMMEDIATELY

WINDING

2 YARN WARP COILERS — Item 12166
Ceiling Type

WHITIN QUILLER—MODEL J — Item L-WQ
304 Spindle
3½" Gauge—10½" Traverse

DYEING & SCOURING

25 SECTION BEAMS—ALLEN — Item 12817
60" between Flanges
32" diameter wood flange—steel bound
12" diameter wood barrel (never used)

FINISHING

COATING MACHINE — Item 12418
72" Width Cloth Roll
Chain Drive

CURTIS & MARBLE STEAM PRESS — Item 12290
66" Working Width
Chain Drive but Without Motor

2 EMBOSSING MACHINES — Item 1244
Cavagnaro—60"—3 Roll

DRY TIGER — Item 13214
3 Cylinder. Complete with cylinders and fancys, motors and starting equipment for cylinders and exhaust hoods.

1 YARN TESTER — Item 13519
Alfred Suter—Single Strand
Hand Operated

1 BEATER — Item 13215
4 Cylinder
With exhaust hoods

MISCELLANEOUS

1 PHILA. GEAR REDUCTION UNIT — Item 13341
Size #12, Part 30, AT71921
No. 6036, 20 HP

390 RED FIBER CASES — Item 12610
35" Long x 17" Wide x 32" high
These cases are well constructed with 4 runners on the bottom and inside metal handles at the top. All corners and top are reinforced metal with 1¼" strap iron.

72 MT WOOD SPOOLS — Item 12321
3" x 4½"—1-7/16" diameter

3 THOMAS HALTON JACQUARD HEADS — Item B-HJ
600 Hooks—Double 300—3 Position
9" Lift—Would include Crank Lever Stand, and Slide Pump Lever. But no Lingoes or Harness

2 JACQUARD MACHINES — Item 13226
600 Hook—Single Lift

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5th and Upland Avenue — PHONE CHESTER 3-4167 — Upland, Delaware Co., Pa.

COMPLETE
NARROW FABRIC
WEAVING PLANT

Weaving 1/4" to 9/16" Inclusive
(80 Looms)

LOOMS
WINDERS
WARPERS
REELERS

Immediate Delivery

For Export Only

FS-6028, Textile World
330 W. 42 St., New York 36, N. Y.

REBUILT MACHINERY FOR IMMEDIATE DELIVERY

1—72" Parks & Woolson Decatizer, Pump & Motor.
1—Butterworth Clip Tenter 40' x 72", Stainless Clips, Reeves & Motor.
1—Hinnekens, 60" Variable Speed Examining & Tubing Machine.
1—Elliot & Hall 54" and 60" Flat Folders.
2—W.J. Tenter Frames, 30' x 54".
1—W.J. Tenter Frame, 30' x 90'.
1—3 roll silk or rayon Calender, M.D.
1—42" Self Balancing Extractor, M.D.
2—150 gal. Jacketed Kettles with agitators.
1—Set of 21-72" x 23" Dry Cans Horizontally.
1—72" Hydraulic Padder, M.D.
1—Set of 9—28" x 60" Heavy Steel Dry Cans.
1—50" V. V. Button Breaker.
1—Johnson 7 Can Slasher.
1—44" Van Vlaanderen motor driven Tuber.
1—60" Verduin 40 ton Hydraulic Calender.
2—60" motor driven Beamers.
4—Hermas measuring & inspecting machines, tube to tube.
1—60" Measuring, Inspecting & Tubing Machine, tube to tube, new, variable speed, forward, neutral & reverse.
30-60 gallon copper steam jacketed Kettles.
1—Hinnekens Boil-off Machine.
1—Sterling 7½ H. P. Vari-drive.
1—Reeves 7½ H. P. Vari-drive.
About 5,000 S. S. high speed V. V. Clips.
Agitators of various sizes.
Motors of various sizes.
New & Used Electric Hoists.

8—60" Verduin, Stainless Steel, Motor Driven Jiggs

2-3 ft. 2-8' 1-10' 1-14' Stainless Steel Lined Dye Boxes

New Copper Rollers 16" x 60" wide, W Bore

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FOR SALE
THREAD WASTE CUTTER
1—No. 1-F Taylor-Stiles "Giant" Thread Waste Cutter. Brand new. Still in original crate. Cheap. Immediate delivery.
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used and rebuilt
KNITTERS—RIBBERS—LOOPERS—
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS
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Phila. 33, Pa.

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1—P.S. 8-fan Loop Dryer, revolving sticks, 105" wide, 60' long, late type
1—V.V. 54" Embosser, 2-roll
5—12' S. S. Dye Becks
1—Hennekens Boil Off, new 1948
1—V. V. Boil Off
1—60" Singer
2—60" Eastwood Floppers
2—V. V. Decatizers
4—Tenter Frames, 60'—50'—40'—30', S. S. clips
2—V. V. 3-roll Calenders, 60"—50"
2—60" Werner 2-roll Padders
3—Beamers, 76"—55"—50"
2—Copper Jacketed Mixers, 200 gal. and 75 gal.
4—Tubers and Folders, 64"—50"
4—50' Inspection Machines
6—Merrow Sewing Machines
2—Metropolitan Sewing Machines
3—Extractors 2—60", 1—48"
1—V. V. 50" Scutcher
1—Rope Washer—8 Compartment
4'—6'—8'—10'—12' Wooden Dye Becks
1—MacBeth Color Matching Lamp, new 1950
1—Elliot Suction Head
4—60" Verdun all S. S. Jiggs
2—60" S. S. Lined Jiggs
1—50" Werner 2-roll Padder
1—V. V. 64" Palmer & Quetch
6—Textile Squeeze sets, 96" long, 2-rubber rolls 19" and 12" dia., roller bearings
1—Set 8 Copper Dry Cans 84"
1—Set 15 Dry Cans 72", 6—S. S., 9—Copper
1—Set 6 Copper Dry Cans 50" x 30" dia.
2—50" Wooden Expanders

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TEXTILE MACHINERY

including Carding Machines, Spinners, Automatic Looms, Slashers, S/S Dyers, Extractors, Calenders, Clip & Pin Tenters, Dry Cans, Multi-color Presses.

Will consider operating or idle plant.

P. O. Box 1351
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WANTED TO BUY

Skein dyeing mach., 250 lbs. Pegg or Obermaier
Piecegoods dyeing mach., 3-ft.
Extractor, centrif.,
Skein dryer.
Skein winder.
Skein reel.
Frame, lace drying.

W-6102, Textile World
330 W. 42 St., New York 36, N. Y.

LOOMS WANTED
DRAPER E

To make 45 inch cloth

CALVINE COTTON MILLS
5620 Bergenline Ave., West New York, N. J.

FOR SALE

10,000 Beam Heads (No Drums)
28 inch dia. 5 ply 1½ inch thick
Metal Rim Brake Band
Mfg'd by Allen Beams & Skyline Lumber Co.
3000 approx. NEW $5.00 ea.
5000 like NEW $3.50 ea.
2000 fair $2.50 ea.

SPECIAL DISCOUNTS FOR LOTS

COMMERCIAL ELECTRIC MOTOR CO.
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OFFERS: 2-Rubber Roll PADDER 70" x 10½" Rotary CUTTER 2-16" knives (Tangled Fibres) 42" Open-top Centr. Hydro-Extractor P&W Kaumagraph Cloth Marking Machine, 3¾ HP GE Elec. Motor 450-RPM DC 250-V

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

FOR SALE
PLUSH WEAVING MILL

12 Double Shuttle Looms, Beamers, Quillers, Power Splitter, and auxiliary equipment. Good running condition.

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WANTED
CRANE KNITTING TABLES

30" to 36" cylinders.

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330 W. 42 St., New York 36, N. Y.

TEXTILE AUXILIARIES

Excellent Reconditioned Machinery in Stock for Immediate Delivery

3—Three Ton Allen Kiers with pumps and heaters
10—Bleach House Squeezers, 18" x 18" rubber rolls
10' Bleach House Tight Washers
New Infra Red Singers, from 50" to 140"
1—20' x 50" 1949 Butterworth Short Tenter
1—60' x 60" Butterworth Swing Tenter Frame
2—60" and 65" 2 roll heavy duty Embossing Calenders
2—50" Silk Yard Folders
1—60" Beamer
1—60" Greystone Hydraulic Batcher, also single and two roll Batchers 50" and 60"
1—20 Ton 72" Hunter Hydraulic 2 roll Padder
2—10 Ton 65" Morrison Hydraulic Padders
Also, 50" to 120" 2 and 3 roll Padders
Also, A.C. and D.C. Motors from 1 H.P. to 100 H.P. and Generators
Copper Dry Cans with vertical or horizontal stands, from 40" to 132", from single Can. to any amount in sets

ASK FOR OUR DETAILED LIST. WE SPECIALIZE IN FINISHING MACHINERY.
Office—15 Ormsbee Ave. Warehouse 146 West River St.
Telephone: DExter 1-9650 DExter 1-8837

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WANTED
(2) 900 JACQUARD MACHINES

Double Lift 5 sided cylinders
Fletcher or Halton

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WANTED
SPINNING FRAMES

400-Spindle McGlynn-Hayes or similar type equipment. Reply to

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330 W. 42 St., New York 36, N. Y.

WANTED
FLAX TOW FINISHER CARD

Preferably with drawing head.

W-5402, Textile World
330 W. 42 St., New York 36, N. Y.

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Must be in good condition, tape drive double pulleys, three to four inch vertical rings, double roller. Write giving full details.

ALLAN YARN MILLS
P. O. Box 424 Lenni Mills, Penna.

WANTED
STAINLESS STEEL DYE TUBS

Woolen type, 5 to 6 ft. depth, in good condition.

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How to keep informed on the "with what" part of your business

AT YOUR FINGER TIPS, issue after issue, is one of your richest veins of job information – advertising. You might call it the "with what" type – which dovetails the "how" of the editorial pages. Easy to read, talking your language, geared specifically to the betterment of your business, this is the kind of practical data which may well help you do a job quicker, better – save your company money.

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You, too, have a big stake in the advertising pages. Read them regularly, carefully to keep job-informed on the "with what" part of your business.

McGRAW-HILL FOR BUSINESS

McGRAW-HILL PUBLICATIONS

HIGHER SPEEDS lower operating costs

Consistent Quality

THE WPF&M MULTI-CAN SLASHER

with 5, 7, 9, or 11 30" CYLINDERS

The WPF&M Multi-Can Slasher is designed to produce consistent quality warps from a wide range of natural or man-made fibers, at high speed and low operating costs.

Furnished with either 5, 7, 9, or 11 thirty-inch diameter cylinders, the Multi-Can Slasher can be adapted and equipped to fill any mill requirements.

The polished, stainless steel cylinders, with welded-in steel heads, can be operated at pressures up to 35 psig. Rotary packless steam joints and sealed, self-aligning anti-friction bearings provide smooth, trouble-free operation. Each cylinder is equipped with vacuum valve, thermometer, condensate trap and flexible pipe connections. Temperature control can be provided for manifold, group or individual cylinder control. Either mechanical or electrical type tension control between cylinders and size box, and head end and cylinders are available.

The WPF&M Multi-Can Slasher is one of the complete line of modern Slashers manufactured by the West Point Foundry & Machine Company—specialist in Slasher Room machinery and equipment.

We will be glad to furnish you with complete details without obligation.

WPF&M WARP PREPARATION MACHINERY

STANDARD 2 and 3 CYLINDER SLASHERS
MULTI-CAN SLASHERS
WPF&M HI-SPEED 4 CYLINDER SLASHERS
CALLAWAY SAMPLE SLASHER

SLASHER MODERNIZATION EQUIPMENT

HI-SPEED HEAD ENDS WITH STRETCH CONTROL
STANDARD WPF&M HEAD ENDS
MULTI-MOTOR DRIVES and CONTROLS
TEMPERATURE, SPEED and TENSION CONTROL DEVICES
HI-SPEED SIZE BOXES, MODEL 50 SIZE BOXES and STANDARD SIZE BOXES
SIZE KETTLES and EQUIPMENT

***AUTOMATIC, POSTIVE DRIVE** eliminates friction clutch and power losses. Tension can be preset and held constant, beam after beam.*

WEST POINT FOUNDRY & MACHINE CO.

WEST POINT, GEORGIA

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. The reader will find that this unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a surprisingly complete source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service that you currently need. Then consult in the index the page numbers that are followed by that letter.

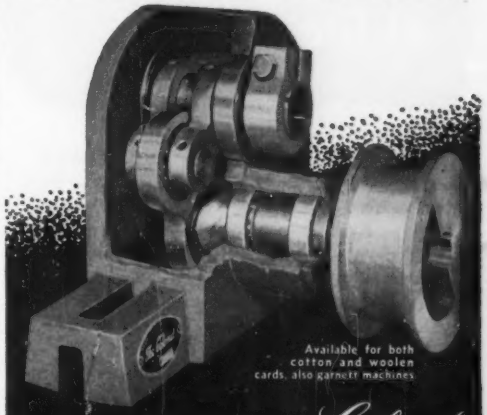
A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling.—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting, and Winding, Equipment and Supplies

An * indicates additional data in the 1951-52 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

*Abbott Machine Co.	197	T
Acme Knitting Mach. & Needle Co.	271	L P
Acme Steel Co.	12	
Aetna Industrial Corp.	206	N
Akron Spool & Mfg. Co.	256	R
Aldon Spinning Mills	269	G
Alemite Div., Stewart-Warner Corp.	150	M
Allen-Bradley Co.	3rd Cover	F
Allen Mfg. Co.	254	O
Allen Warper Co.	259	R
*Allis-Chalmers Mfg. Co.	30-31	F Q
Alvey Conveyor Mfg. Co.	186	P
American Crayon Co.	269	E L R
American & Efird Mills, Inc.	276	G
*American Lava Corp.	175	L RT
American Lumber & Treating Co.	224	B
American Metal Spinning & Stamping Co.	276	E
*Amrican Monorail Co.	42	P
American Schweiter Co.	28	T
American Steel & Wire Co.	71	O
American Viscose Corp. (Yarns)	173	G
Antara Chemicals Div., of General Dyestuff Corp.	29	C
*Appleton Machine Co.	202	E
Armco Steel Corp.	80	O
Armour & Co.	8	C T
*Armstrong Cork Co. (Cots)	40-41	
*Armstrong Cork Co., (Roll Covering)	26	R
Arnold, Hoffman & Co., Inc.	61	C
*Ashworth Bros., Inc.	76	T
*Atkinson, Haserick & Co.	20 to 25	T
Atlantic Rayon Corp.	246	G
*Atlas Electric Devices Co.	264	K
*Bachmann Uxbridge Wstd. Corp.	177	R
*Bagley & Sewall	281	E
Baker & Adamson Products, General Chemical Div., Allied Chem. & Dye Corp.	165	C
*Barber Colman Co., Controls Div.	299	K
Textile Div	273	R
Barco Mfg. Co.	215	H
Barnes Textile Associates, Inc.	272	N

The Colonel

FIRST NAME IN COMB BOXES



Available for both cotton and woolen cards, also garnett machines

ANOTHER FIRST FOR THE Colonel BALL BEARING COMB BOX

Again the Colonel sets the pace . . . no more delays and costly down-time for users of the Colonel Ball Bearing Comb Box. Like the self-aligning tail stand that only a few months ago revolutionized the manufacture of Comb Boxes . . . the new, completely re-designed Colonel is so simple, so easy to adjust that you can now make repairs and adjustments in your own shops . . . now, there is no need for expensive factory returns. Be sure to see the new Colonel.

The New Colonel Ball Bearing COMB BOX

✓ *The Simplest!* ✓ *The Most Economical!* ✓ *The Best!*

ODOM Machine Manufacturing Corp.

ROSWELL, GEORGIA

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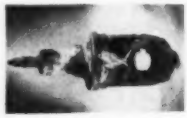
SIN COVER MACHY. CO. • (FOREIGN REP.) • ATLANTA, GA.
BUENOS AIRES • ARGENTINA

For more information, write direct or use Reader Service post card. 297

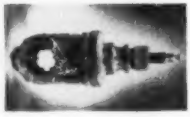
What happened when *KLEENAKARB* was demonstrated at Greenville?

One after another, textile executives were amazed when they saw the remarkable KLEENAKARB 'before-and-after' Cold Dip parts cleaning demonstration. Valves, gears and typical loom parts—dried and caked with grease, oil, dirt and lint—were Cold Dipped in KLEENAKARB. The story was always the same. Each part emerged with a brand new look, thoroughly clean inside and out... with a longer life ahead.

How you can make this amazing 'before & after' test in your own mill:



Before **KLEENAKARB** dip.



After **KLEENAKARB** dip.

The Selig Company has developed, for those who wish to test KLEENAKARB on their own equipment, a **12-GAL. KLEENAKARB TRIAL KIT.** The kit consists of 10-gallons of KLEENAKARB with dipping basket and is available at nominal cost. Price and full information furnished upon request.

SELIG — The Selig Company

Manufacturing Chemists

Since 1896

ATLANTA

DALLAS — NEW ORLEANS — HOUSTON

Bendix Aviation Corp., Eclipse Machine Div.	70	T
*Bersworth Chemical Co.	263	C
Bijur Lubricating Co.	226	M
Birney & Smith Co.	274	E, L, R
Birmingham Committee of 100	200	N
Boger & Crawford	193	G
*Booth Co., Benjamin	146	T
Buffalo Pumps, Inc.	216	H
Burlington Engineering Co., Inc.	13	E
*Butterworth & Sons Co., H. W.	142	E
Cabot Inc., Samuel	281	R
*Caldwell Co., W. E.	282	B, E
Carrier Corporation	58	A
Celanese Corp. of America, Chemical Div.	64-65	C
Yarn Div.	211	G
Century Electric Co.	10	F
Chemsteel Construction Co., Inc.	280	B
*Chicago Pneumatic Tool Co.	253	H
Ciba Co.	77	C
Cities Service Oil Co.	181	M
Cleaver-Brooks Co.	157	Q
Cleveland Tramrail Div., The Cleveland Crane & Eng'g. Co.	84	P
Clipper Belt Lacer Co.	275	Q
*Cocker Machine & Fdry. Co.	229	R
*Cole Mfg. Co., R. D.	244	B, E, P
*Colson Corp.	242	P
Colton Chemical Co.	238	C
Columbia-Geneva Steel Co.	71	O
*Cook-P & N Machine Co., Inc.	148	E
Corn Products Refining Co.	52	C
*Crane Co.	88	H
Crane Mfg. Co.	248	L
*Crompton & Knowles Loom Wks.	46	R
Crucible Steel Co.	89	O
*Curtis & Marble Machine Co.	242	T
Dana Warp Mills	269	G
*Darnell Corp., Ltd.	238	P
*Dary Ring Traveler Co.	252	T
Dexter Chemical Co.	230	C
Dixie Leather Corp.	171	R
Dodge Mfg. Co.	86	Q
Dolge Co., C. B.	248	B
*Dommerich & Co., L. F.	36	N
Dow Corning Corp.	245	C
*Draper Corporation	1	R
Dronsfield Bros. Ltd.	261	T
*duPont de Nemours & Co., E. I.		
Dyestuffs Div.	219	C
Electrochemical Dept.	233	C
Plastics Div.	87	O
*Economy Baler Co.	275	P
Elliott Co., Crocker-Wheeler Div.	51	F
*Emery Industries, Inc.	91	C
Engineered Plastics, Inc.	210	O
Erick-Gross Corp.	228	L
Ericsson Telephone Sales Corp.	234	K
Fafnir Bearing Co.	67	O, Q
Fairbanks Co., The	222	P
Fairbanks-Morse & Co.	255	H
Falls Yarn Mills	250	G
Fielden Inst. Div., Robertshaw-Fulton Controls Co.	221	K
*Foster Machine Co.	68	T
Foxboro Co.	60, 260	K
Fuller Brush Co.	198	B
Gair Co., Robert	189	P
Gardner-Denver Co.	33	H
Gaylord Container Corp.	159	P
General Chemical Div., Allied Chem. & Dye Corp.	165	C
General Dyestuff Corp.	201	C
*General Electric Co.	32, 82-83	F, Q
Glasco Equipment Corp.	239	E
Goodyear Tire & Rubber Co.	9	H
Graton & Knight Co.	171	R
Gulf Oil Corp.—Gulf Refining Co.	69	M
Hardwood Mfg. Co., The	259	R
*Haskell-Dawes Mach. Co., Inc.	248	T
*Heim Co.	204	R
Heineman Corp., O. Div. of Aetna Industrial Corp.	279	G
*Hild Floor Machine Co.	277	D
Holdsworth Gill Screw Co.	24-25	T
Houghton & Co., E. F.	66	C
*Howard Bros. Mfg. Co.	62	T
*Hunter Machine Co., Jas.	63	F
*Huyck & Sons, F. C.	272	E
Hyatt Bearings Div., General Motors Corp.	225	O, Q
*Ideal Industries, Inc.	58	T
*Industrial Heat Eng'g. Co.	262	E
Industrie-Werke-Karlsruhe	268	E
Ingolstadt	275	T

Iselin & Co., Inc., Wm.	209	N
*Ives Co., L. T.	271	I
*Jenkins Sons Inc., M. W.	196	E
*Jiffy Textile Marker Co.	282	E I H
Johnson, Chas. B.	16	B
Johnson Service Co.	47	K
Keever Starch Co.	195	C
*Kenyon & Son, D. R.	269	E
Kidde & Co., Inc., Walter	249	T
*Kidde Mfg. Co., Inc.	227	I
Kold-Hold Mfg. Co.	192	E O
Lador, SA	279	L
*Lambeth Rope Corp.	257	RT
*Laurel Soap Mfg. Co., Inc.	240	C
Lazenby Co., F. A., The	251	T
Linde Air Products Co., a Div. of Union Carbide & Carbon Corp.	214	L RT
*Link-Belt Co.	7, 19	Q
Livermore Corp., H. F.	59	R
*Loper Co., Ralph E.	280	N
Main Co., Chas. T.	276	N
Manheim Mfg. & Belting Co.	90	Q
Marshall & Williams Corp.	257	E
Masury-Young Co.	199	B
May Inc., Otto B.	56-57	C
*M-B Mfg. Co., Inc.	203	L RT
Mellor, Bromley & Co., Ltd.	232	L
*Merrow Machine Co.	271	E
Minneapolis-Honeywell Reg. Co., Industrial Div.	48-49	K
Minnesota Mining & Mfg. Co.	231	E RT
Mobilift Corp.	168	P
*Monsanto Chemical Co., Textile Chemical Dept.	81	C
Morris Fur Co.	278	R
*Mt. Hope Machinery Co.	267	E
National Aniline Div., Allied Chem. & Dye Corp.	35	C
*National Drying Machy. Co.	300	E
National Ring Traveler Co.	269	T
National Tube Co.	71	O
New Departure Div. of General Motors	15	O Q
N. Y. & N. J. Lubricant Co.	243	M
Nopco Chemical Co.	38	C
Norris Bros.	247	R
Oakite Products, Inc.	275	C
Odom Machine Mfg. Corp.	297	T
*Paddock Co., J. C.	274	P
Parks-Cramer Co.	190	A D
Penick & Ford Co., Ltd.	267	C
*Perfecting Service Co.	218	H
Permutit Co.	266	B
Philadelphia Quartz Co.	246	C
Pick Mfg. Co.	270	E
Pittsburgh Coke & Chem. Co.	93	C
Platt Bros. (Sales) Ltd.	20-21	T
Precision Gear & Machine Co.	277	Q
*Prince, Smith & Stells	22-23	T
*Proctor & Schwartz, Inc.	79, 208	E T
*Reiner Inc., Robert	217	L
Reliance Elec. & Eng'g. Co.	179	Q
Rhoads & Sons, J. E.	5	R
Richmond Oil, Soap & Chem. Co.	251	C
*Ridge Tool Co.	194	H
*Robert & Co., Associates	2nd Cover	N
*Rohm & Haas Co.	187	C
Rome Soap Mfg. Co.	271	C
Ross Engineering Corp., J. O.	263	N
Ryerson & Son Inc., J. T.	144	O
*Saco-Lowell Shops	6	T
*Sargent's Sons Corp., C. G.	205	E
Scherr Co., Inc., Geo.	278	K
Schlafhorst & Co., W.	11	RT
Schweiter Ltd.	28	T
Scott & Williams, Inc.	241	R
Scott Testers, Inc.	78	K
Selig Co., The	298	D
*Simco Co., The	246	E L RT
Sisalkraft Co., The	247	P
SKF Industries, Inc.	92	O Q
Socony-Vacuum Oil Co., Inc.	27	C
Solvay Process Div., Allied Chem. & Dye Corp.	163	C
*Sonoco Products Co.	153	E T

End your humidity control problem!

with this...

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ELECTRONIC "PACKAGE" UNIT

SUPER-SENSITIVE

INSTANT RESPONSE

RUGGED PLUG-IN ELEMENT

EASILY INSTALLED

ADJUSTABLE DIFFERENTIAL

POSITIVE STABILITY

SIMPLE ADJUSTMENTS

This All-In-One Humidity Control unit is your answer to accurate, sensitive performance, whether in weave sheds, spinning rooms, roving rooms, or any location where machine loads might cause spotty conditions. This dependable self-contained control is performance-proved under actual job conditions. *It will not shift in control point after weekend shutdowns.*

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These flexible controls are also available with remote room or duct sensing elements in either the two-position or proportioning types for completely air-conditioned mills.

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1208 ROCK ST., ROCKFORD, ILLINOIS

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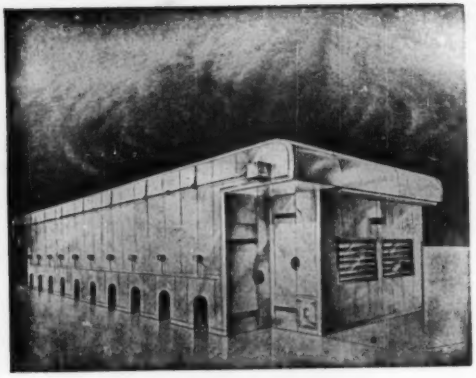
*Standard Chemical Prod., Inc.	161	C
*Standard Fabricators Inc.	237	E
*Standard Pressed Steel Co.	283	O
Stellite American Corp.	265	T
*Stephens-Adamson Mfg. Co.	191	O,Q
*Sterling Ring Traveler Co.	240	T
*Stop-Motion Devices Corp.	261	I
Sun Oil Company	140	C
Superior Combustion Industries, Inc.	282	Q
*Supreme Knitting Mach. Co., Inc.	223	L
Swift & Co., Soap Dept.	213	C
*Synthane Corp.	39	T
Tennessee Coal & Iron R. R.	71	O
Tennessee Corp.	257	C
*Terrell Machine Co., Inc.	43	R
Texnovo, S.P.A.	283	R
Textile Banking Co.	182	N
*Textile Machine Wks.	94, 155	L
Tide Water Associated Oil Co.	50	M
*Tompkins Bros. Co.	230	L
Ton-Tex Corp.	280	QRT
Torrington Co., The (Needles)	53	L
Torrington Co., The (Bearings)	54	O,Q
Tower Iron Works	212	E
Union Carbide & Carbon Corp., Linde Air Products Co.	214	I,RT
Unionmatex, Textilmaschinen-Union, G.M.B.H.	37	E,RT
*US Bobbin & Shuttle Co.	85	T
*U. S. Ring Traveler Co.	251	T
U. S. Steel Co.	71	O
U. S. Steel Export Co.	71	O
U. S. Steel Supply Co.	71	O
U. S. Stoneware Co.	278	B
U. S. Testing Co.	250	X
*Universal Winding Co.	14, 166	T
*Veeder-Root, Inc.	4th Cover	K
Victor Ring Traveler Co.	34	T
*Walton Laboratories, Inc.	185	A
*Warner & Swasey Co.	44-45	R
Warwick Chemical Co.	2	C
Watson-Williams Mfg. Co.	243	R
Westinghouse Electric Corp., Air Conditioning Div.	207	A
Motors & Controls	72-73	F
Weston Electrical Inst. Co.	74	K
West Point Fdry. & Mach. Co.	296	R
*Whitin Machine Works	75	T
*Whitinsville Spinning Ring Co.	269	T
Wildman Mfg. Co.	220	L
*Wolf & Co., Jacques	235	C
Wood's Sons Co., T. B.	267	Q



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Previous models of "NATIONAL" dryers of this type have successively advanced the efficiency, speed and economy of piece goods drying, with each new design offering greater production and quality rewards to finishing plants and departments. In this latest model, an even higher investment return is assured, through additional improvements in design, construction, operating and control elements.

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H. E. Hilty, Mgr.

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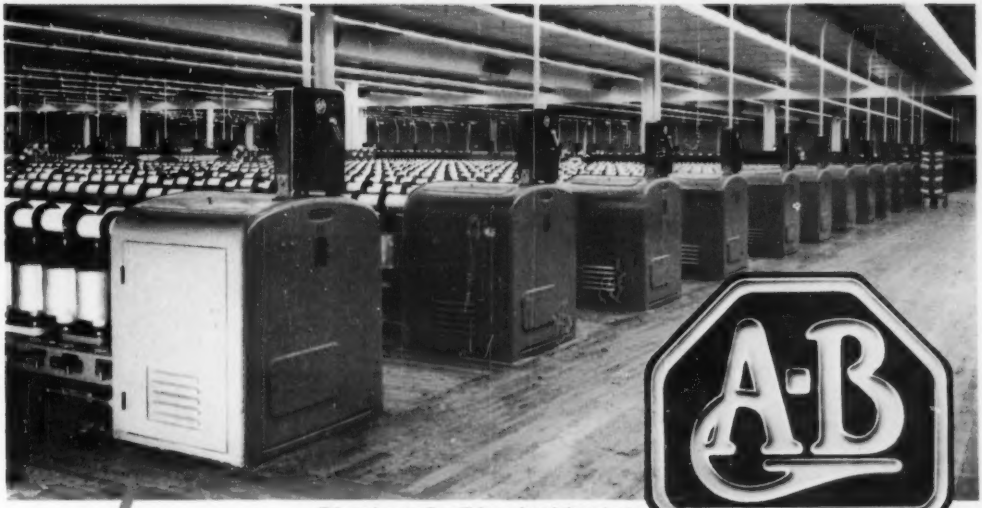

This modern textile mill is equipped throughout with trouble free Allen-Bradley motor controls.

A-B Quality

122

ALLEN-BRADLEY COMBINATION STARTERS

used on Twisting Machines in this Modern Textile Mill

The management team of modern textile mills, today, is discovering the importance of specifying that its machinery comes equipped with trouble free Allen-Bradley motor controls. Throughout the years, this enviable reputation for reliableness that Allen-Bradley controls have built up for themselves in many industries has finally become the accepted standard of excellence among textile mill operators in specifying motor controls. The outstanding performance record of Allen-Bradley motor controls is your guarantee of continuous, uninterrupted mill production with a minimum of maintenance. Allen-Bradley control engineers have a broad experience in solving tough textile mill control problems. See them, today.

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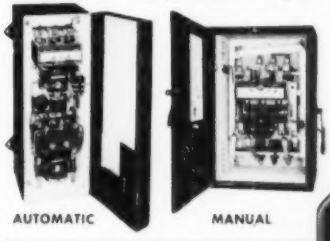
For Velvet Smooth Starting

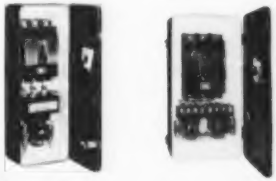
Select an Allen-Bradley Reduced Voltage Starter



AUTOMATIC MANUAL

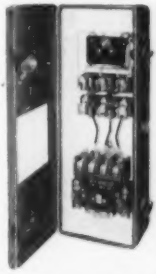
For Across-the-line Starting

Select an Allen-Bradley Combination Starter



COMBINATION COMBINATION REVERSING

Semi-Dustproof Enclosure



Allen-Bradley Bulletin 712 Combination Starter with fused disconnect switch. This unit is installed in a semi-dustproof enclosure for added protection against dirt, dust and lint. White interior. Numerous knockouts. Bonderized.

A-B Quality

ALLEN-BRADLEY

QUALITY

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Now... Every Feature that Mill Men Want!

Look at all that's built into these NEW 2-3 Counters

Now here are counters built the way mill men want them . . . in this modern streamlined design developed by "*The Name That Counts*". Rich grey crackle finish, with gleaming, *easy-to-turn* black plastic reset knobs, with built-in shear-pin protection. Easier to read, too, and to maintain. And Veeder-Root Quality in every part . . . brass bearings on horizontal shafts . . . Oilite bronze bearings on vertical drive shafts . . . new plastic drive connection. See the new V-R 2-3 Pick, Hank, Yardage and Knitting Counters right away.

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